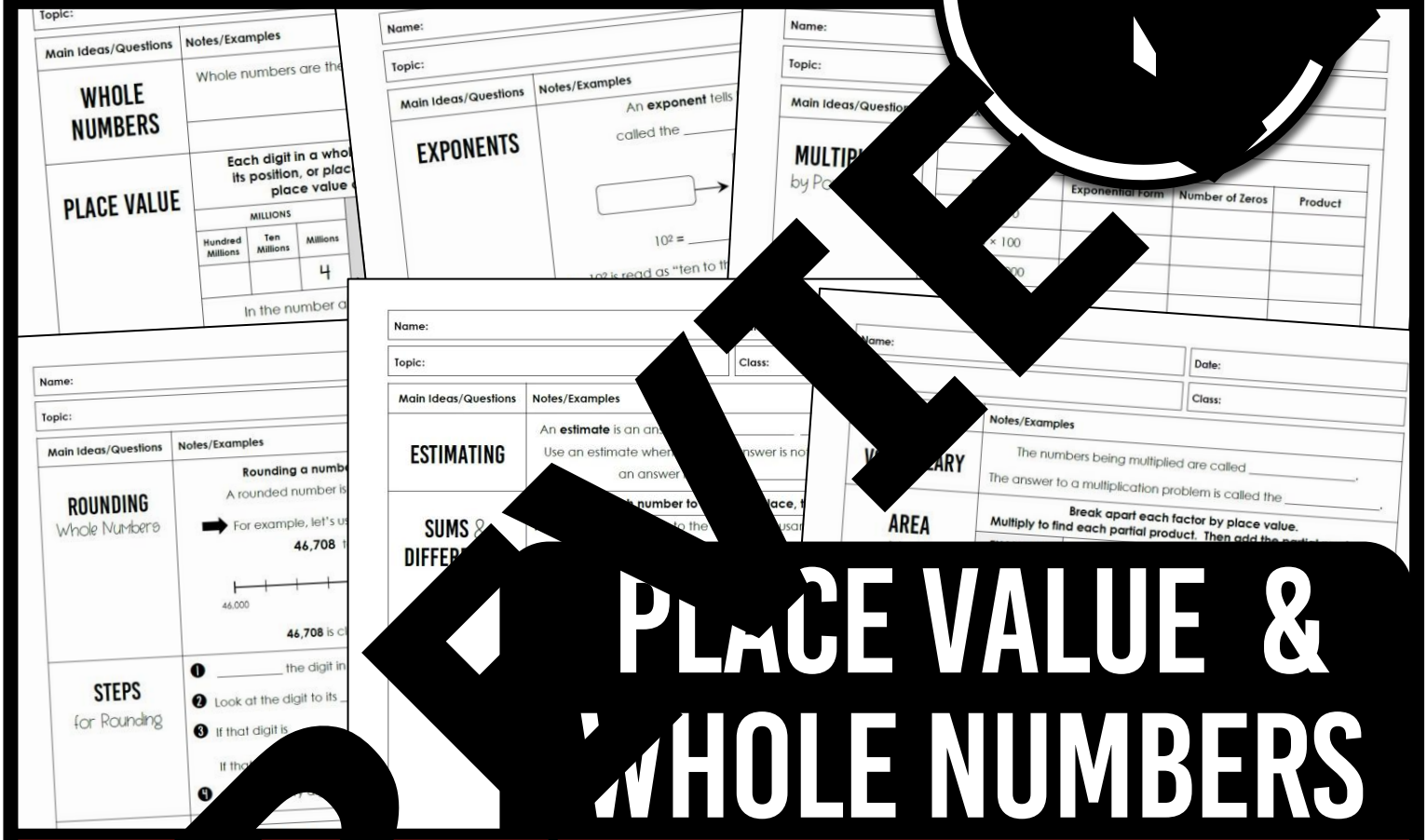
MATH 5

Unit 1



PREVIEW

PLACE VALUE & WHOLE NUMBERS

NOTES • HOMEWORK • QUIZZES • TEST

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Unit 1 – Place Value & Whole Numbers: Sample Unit Outline

	TOPIC	HOMEWORK
DAY 1	Place Value & Number Forms (Standard, Word, Expanded); Comparing & Ordering	HW
DAY 2	Powers of 10 & Exponents	HW
DAY 3	Multiplying & Dividing by Powers of 10	#3
DAY 4	Rounding Whole Numbers	W #
DAY 5	Using Rounding to Estimate Sums, Differences, Products, and Quotients	
DAY 6	**Quiz 1-1**	
DAY 7	Multi-Digit Multiplication	HW #5
DAY 8	Division with 1-Digit Divisors	HW #6
DAY 9	Division with 2-Digit Divisor	HW #7
DAY 10	Interpreting Remainders	HW #8
DAY 11	**Quiz 1-2**	None
DAY 12	Prime & Composite Numbers	HW #9
DAY 13	Prime	HW #10
DAY 14	test Co Fa & Least Common Multiple	HW #11
DAY	Mul ep Word P ems	HW #12
DAY		None
7	eview	Study For Test
D 8	**UNIT 1 TEST**	None

TIONAL RESOURCES:

ideo Links & Google Slides

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
WHOLE NUMBERS	Whole numbers are the _____ _____, including _____.
PLACE VALUE	**Each digit in a whole number has a value ... determined by its position, or *place*, in the numb... chart ... the place value of each digit ... number 4,70...**

MILLIONS						ONES		
Hundred Millions	Ten Millions	Millions	Hund... Tho...	Ten Thousand...	...ands	...eds	Tens	Ones
		4	,	0	,	3	8	2

In the number ...ve, the d... is ...he _____ _____ place. It... ...ue is _____.

PLACE VALUE
Patterns

Ea... pla... th... _____ the place to its **right.**

...ch place is wo... _____ the place to its **left.**

...	Hu... Th...	Ten Thousands	Thousands	Hundreds	Tens	Ones
1,...	...000	10,000	1,000	100	10	1

- The thousands place is worth _____ the hundreds place.
- The ones place is worth _____ the tens place.
- The hundreds place is worth _____ the tens place.

E...PLES

Use the number **37,816,054** for questions 1-5.

1. What is the place and value of the 8?

Place: _____ Value: _____

2. What digit is in the ten thousands place? _____

3. What is the value of the 7? _____

4. What is 10,000 more than this number? _____

5. What is 100,000 less than this number? _____

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NUMBER
Forms

Use **2,406,510** as an example for each form

Standard Form	A number written using _____ and _____.
Word Form	A number written in _____. _____ _____
Expanded Form	A number written as the _____ of th[illegible] of [illegible]its. _____ _____

EXAMPLES

Write each number in <u>standard form</u>.

6. eight hundred fifty thousand, twel[illegible]

7. three million, sixty thousand, [illegible] hund[illegible]

Write the number in <u>word f[illegible]</u>

8. 405,230

Write the nu[illegible] expa[illegible] <u>form</u>.

9. 6,075,[illegible]

COMPARING
Whole Nu[illegible]s

[illegible] compa[illegible] whole numbers, line up the place values.

[illegible]rt [illegible]e _____ and compare the digits in each place until they are different.

[illegible]mpare the values by filling in the circle with a <, >, or = symbol.

10. 4,5[illegible],207 ◯ 4,561,027	**11.** 709,880 ◯ 790,088
[illegible] 2,000,301 ◯ 2,000,031	**13.** ninety thousand, nine ◯ 90,009

O[illegible]RING
Whole N[illegible]mbers

14. Order the numbers from **least to greatest**:

63,415 63,154 6,341,500 634,150

15. Order the numbers from **greatest to least**:

829,070 8,290,700 82,079 82,907

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 1:** Place Value & Number Forms

**** This is a 2-page document! ****

Use the number **52,948,163** for questions 1-6.	
1. What digit is in the hundred thousands place?	**2.** What is the place of the 4?
3. What is the value of the 2?	**4.** What is the value of the 6?
5. What is 1,000 more than the number?	**6.** What is 10,000 less than the number?
Answer each question.	
7. What digit is in the ten millions place of **161,504,961?**	**8.** What is the number of the place (not the [illegible]) of the 7 [illegible]**215?**
9. What is 100,000 more than **4,562,708?**	**10.** What is the value of the underlined digit in **26,3<u>4</u>1[illegible]?**
11. What is the greatest 7-digit number that [illegible] repeating digits and a 5 in the thousands place?	
Write each number in standard form.	
12. six hundred thirty thousand, two hundred eight	
13. four million [illegible]-one thousand, seventeen	
[illegible] eight [illegible]ve thousand, six	
15. [illegible]ns + 6 hundred thousands + 4 tens	
16. 900,000 + 40,000 + 300 + 7	
17. 5,000,000 + 80,000 + 9	

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Write each number in word form.

18. 72,405

19. 309,160

20. 5,008,042

Write each number in expanded form.

21. 46,302

22. 805,190

23. 7,260,054

Compare the values by filli[illegible] the circle [illegible] or = symbol.

24. 381,402 ◯ [illegible]

25. 6,050,000 ◯ 6,500,000

26. 90,909 ◯ [illegible],990

27. seventy thousand, sixty ◯ 70,600

28. Order [illegible] numb[illegible] **[illegible]st to greatest**.

45,812 [illegible],120 45,128 4,581,200

The [illegible]ulations of three cities are shown below. Order the populations from **[illegible]st to least.**

[illegible]ton: 1,204,563 Ashford: 1,240,356 Milton: 1,042,653

30. Marcus says that the value of the 6 in 563,201 is 6,000. Is Marcus correct? Explain.

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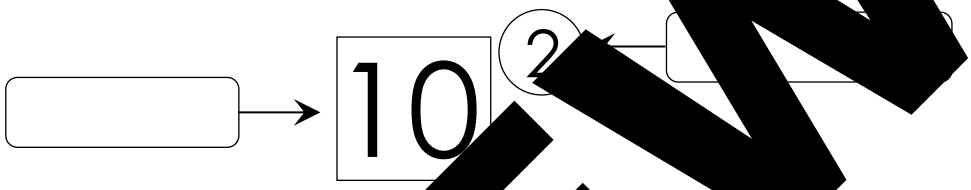
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

EXPONENTS

An **exponent** tells how many times a number,

called the _____, is used as a _____.



10^2 = _____ = _____

- 10^2 is read as "ten to the _____ power" or "ten _____."
- 10^3 is read as "ten to the _____ power" or "ten _____."

POWERS of Ten

A *power of 10* is a number that can be written using 10 as the base.

Exponential Form	Repeated Multiplication	Standard Form	Number of Zeros
10^1	10	10	1
10^2	10 × 10	100	2
10^3			
10^4			
10^5			
10^6			

PATTERN: The exponent on a power of 10

tells the number of _____ in the standard form.

EXAMPLES

Write each product in exponential form.

1. 10 × 10 × 10 × 10

2. 10 × 10 × 10 × 10 × 10 × 10 × 10

Find the value of each power.

3. 10^5

4. 10^2

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Write each number as a power of 10.

5. 1,000,000

6. 10,000

EXPANDED Form

Powers of 10 can be used to write numbers in expanded form.

Standard form	**5,307**
Place values	5 thousands + 3 hundreds + 0 tens + 7 ones
Expanded form	$(5 \times$ _____$) + (3 \times$ _____$) + (7 \times 1)$
Using exponents	$(5 \times$ _____$) + ($ _____$)$

7. Write **42,060** in expanded form using powers of 10.

8. Write **305,708** in expanded form using powers of 10.

9. Write in standard form: $(1 \times 10^5) + (1 \times 10^3) + (8 \times 10^2) + 4$

10. Write in standard form: $(6 \times 10^4) + (3 \times 10^2) + (7 \times 10^1) + 2$

COMPARING Powers

Compare values by filling in the circle with a <, >, or = symbol.

11. 10^4 ◯ 1,000

12. 100,000 ◯ 10^5

APPLICATIONS

13. A video was viewed about 10^6 times. Write this number in standard form and word form.

14. Jayden says that $10^4 = 40$. What mistake did he make? What is the correct value?

15. A town has a population of 10^4. A city has 10 times as many people. Write the city's population as a power of 10 and in standard form.

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 2:** Powers of 10 & Exponents

**** This is a 2-page document! ****

Write each product in exponential form.	
1. $10 \times 10 \times 10 \times 10 \times 10$	**2.** 10×10
3. $10 \times 10 \times 10$	**4.** $10 \times 10 \times 10 \times 10$
Write each power as repeated multiplication. Then find the	
5. 10^3	**6.**
7. 10^7	10^9
Write each number as **er o**	
9. 100	**10.** 100,000
11. 10	**12.** 10,000,000
the ue of each power.	
1	**14.** 10^1
15. 10^8	**16.** 10^{10}

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Write each number in expanded form using powers of 10.

17. 6,250

18. 81,407

19. 300,090

Write each number in standard form.

20. $(7 \times 10^4) + (3 \times 10^2) + (6 \times 10^1)$

21. $(\times 10^6) + (\quad ^3)$

Compare the values by filling in the circle wi , >, or = s ol.

22. 10^6 ◯ 100,000

10^3 ◯ $10 \times 10 \times 10$

24. 10^2 ◯ 20

25. 1,000,000 ◯ 10^7

26. How man in the s form of 10^{12}

27. A power of 10 has 8 digits in its standard form. Write this number as a power of 10.

. Orde ese from st to greatest:
10^8 00, 10^1, $10 \times 10 \times 10 \times 10$

29. A bakery packs 10 muffins in a box, 10 boxes in a case, and 10 cases on a pallet. How many muffins are on one pallet? Write it as a power of 10.

30. Is 20,000 a power of 10? Explain how you know.

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

MULTIPLYING
by Powers of 10

Look for a pattern!			
Expression	**Exponential Form**	**Number of Ze**	**Pro**
34 × 10			
34 × 100			
34 × 1,000			
34 × 10,000			

When you multiply a wh mber by 0:

- Each digit moves _____ one plac every zero in the power of 10.
- Each place to th makes its _____ times as much.

Shortcut:

- Wri _____ end of the whole number, one for every in the power for the _____ in exponential form.

Note: This shortcut only works for whole numbers!

DIVIDING
by Powers

Look for a pattern!			
ssi	**Exponential Form**	**Number of Zeros**	**Quotient**
520, 10			
000 ÷ 100			
520,000 ÷ 1,000			
520,000 ÷ 10,000			

When you divide a whole number by a power of 10:

- Each digit moves _____ one place for every zero in the power of 10.
- Each place to the right makes its value _____ as much.

Shortcut:

- _____ one zero from the end of the whole number for every zero in the power of 10, or for the _____ in exponential form.

Note: The number must end in at least that many zeros!

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EXAMPLES

Find each product or quotient.

1. $76 \times 1{,}000$

2. 405×10^2

3. 9×10^5

4. $62 \times 10{,}000$

5. $830{,}000 \div 100$

6. $6{,}000{,}000 \div 10$

7. 70×10^3

8. $7{,}200{,}000 \div 10^3$

MULTIPLES of 10

Use multiplication and d[illegible]facts and [illegible]zeros to multiply or divide.

9. 30×400

10. $[illegible]00 \times 4{,}000$

11. $24{,}[illegible]00 \div [illegible]$

12. $3{,}500{,}000 \div 700$

13. [illegible]0

14. $420{,}000 \div 70$

MISSI[illegible]es

15. _____ = 58,000

16. _____ $\div 10^2 = 470$

17. $3 \times 10^{\square} = 3{,}000{,}000$

18. $910{,}000 \div$ _____ $= 91$

APPL[illegible]ATIONS

19. A pencil company packs 1,000 pencils in each case. How many pencils are in 45 cases?

20. A town of 270,000 people is split evenly into 10^2 voting districts. How many people are in each district?

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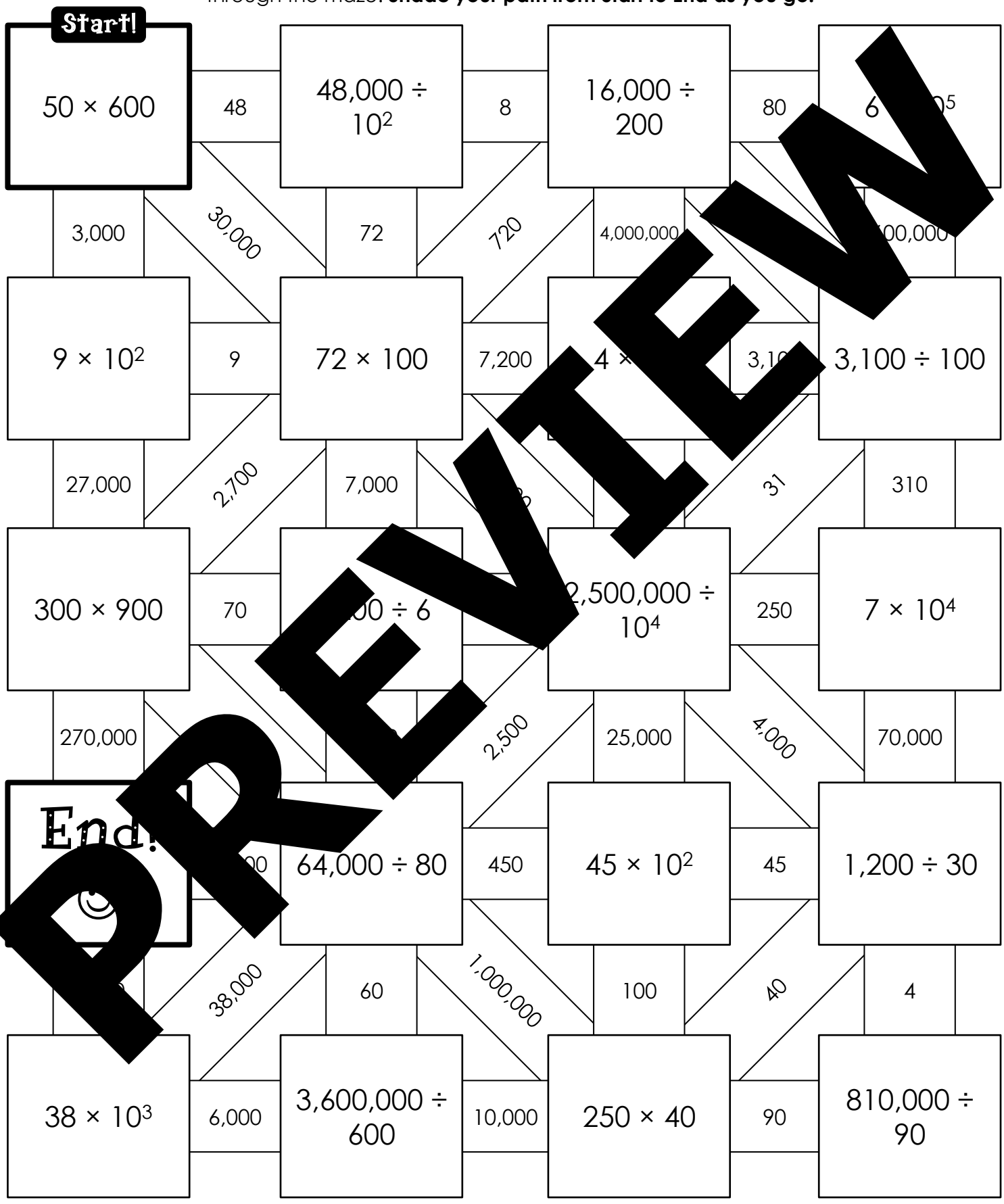
POWERS OF 10 Maze!

Directions: Find each product or quotient. Use your solutions to navigate through the maze. **Shade your path from Start to End as you go!**



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 3:** Multiplying & Dividing by Powers of 10

**** This is a 2-page document! ****

Find each product or quotient.	
1. 63 × 100	**2.** 8×10^4
3. 520 × 1,000	**4.** 39×10^3
5. 9,000 ÷ 10	$\div 10^2$
7. 7,100,000 ÷ 1,000	$000,000 \div 10^5$
9. 306×10^2	**10.** 15×10^6
ication division facts and count the zeros to multiply or divide.	
40 ×	**12.** 500 × 60
13. 8,000 × 900	**14.** 4,800 ÷ 80

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15. 56,000 ÷ 70

16. 2,000,000 ÷ 40

17. 90 × 3,000

18. 360,000 ÷ 9,000

Find the missing value that makes each statement true.

19. 29 × _____ = 29,000,000

20. 6 × 1□ = 600

21. _____ ÷ 10^3 = 380

0,000 ÷ _____ = 85

23. _____ × 10^4 = 710,000

_____ ÷ 10^4 = 9

25. A stadium has 10^4 seats. Each seat cost $35 for a concert. How much money is collected if every seat is sold?

grocery store ordered 6,400 apples. The pples come in crates of 100. How many crates did the store order?

27. A school district bought 200 laptops for $400 each. What was the total cost?

28. Explain why 84 × 10^3 and 840 × 10^2 have the same product.

29. says 3,000 ÷ 10^2 = 3. Do you agree? Expl

30. A factory packs 250 pencils in each box. How many pencils are in 10^3 boxes?

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
ROUNDING Whole Numbers	**Rounding a number makes it simpler to work with.** A rounded number is _____ to the ex[illegible]ber. ➡ For example, let's use the number li[illegible]below [illegible]ou[illegible] **46,708** to *the nearest tho[illegible]*  **46,708** is [illegible]er to _____.
STEPS for Rounding	❶ _____ the [illegible]igit in t[illegible]ce you a[illegible]ounding to. ❷ Look at the digi[illegible]s _____ ❸ If tha[illegible] _____ _____, round up. [illegible]at digit is _____ _____, round down. Cha[illegible]every digit to the right of the underlined digit to _____.
EXAM[illegible]	**[illegible]1,560 to the...** / **Rounded Number** [illegible]nearest ten nearest hundred nearest thousand nearest ten thousand nearest hundred thousand nearest million
WATCH OUT FOR 9'S!	• Round **29<u>7</u>,850** to the nearest ten thousand: _____ • Round **49,<u>9</u>62** to the nearest hundred: _____ • Round **59<u>9</u>,712** to the nearest thousand: _____

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More
EXAMPLES

1. Round **364,532** to the nearest thousand.

2. Round **58,296** to the nearest ten.

3. Round **41,627** to the nearest hundred.

4. Round **835,104** to the nearest ten thousand.

5. Round **2,749,380** to the nearest hundred thousand.

6. Round **[illegible]53** to the nearest hundred.

7. Round **492,318** to the nearest ten thousand.

8. Round **39,996** to the nearest thousand.

9. Round **5,617,280** to the nearest million.

10. Round **309,148** to the nearest thousand.

APPLICATIONS

11. A stadium sold 68,[illegible] tickets for a football game. Round the number of tickets to the nearest thousand.

12. A used car is listed for $14,862. About how much does the car cost, rounded to the nearest hundred dollars?

13. Rounded to the nearest hundred, 1,600 people attended a concert. What is the greatest number of people that could have actually attended?

14. Rounded to the nearest thousand, the population of a small town is 25,000. What is the least number of people that could actually live in the town?

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
ESTIMATING	An **estimate** is an answer that is _____ _____ the exac wer. Use an estimate when an exact answer is not ne to c if an answer is _____
SUMS & DIFFERENCES	**Round each number to the same place, d subtract.**
	1. Estimate by rounding to the nearest usand: 4,8
	2. Estimate by rounding earest th ,904 − 28,350
	3. Estimat ounding the nea hundred: 1,648 + 2,391
	by rounding to the nearest ten thousand: 83,217 − 46,905
UCTS	**ound each factor to its greatest place, then multiply.** Example: 237 rounds to 200, 68 rounds to 70, and 4 stays 4.
	5. 386 × 52 — **6.** 4,190 × 7
	7. 2,875 × 41 — **8.** 6,308 × 9

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QUOTIENTS

Use <u>compatible numbers</u>: numbers that are _____ to divide mentally. Think of a basic fact!

9. 2,738 ÷ 9

10. 4,215 ÷ 62

11. 3,175 ÷ 8

12. 5,640 ÷ 71

APPLICATIONS

13. The Riverside Zoo needs at least [illegible] visitors over the weekend to meet its goal. It had 2,8[illegible] visitors on Saturday and 3,129 visitors on Sunday. Estimate to the nearest hundred to decide whether the zoo met its goal.

14. A stadium has 25[illegible] seats. At Friday's game, 28,760 seats were filled. Estimate the number of empty seats to the nearest thousand.

15. A bakery baked 18 trays of cookies with 36 cookies on each tray. The owner says she baked more than 1,000 cookies. Use estimation to decide whether her claim is reasonable.

16. A theater collected $4,865 from ticket sales for a show. Every ticket cost $7. About how many people attended the show?

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ROUNDING & ESTIMATING *Connect the Dots!*

Round each number to the place in parentheses.

1. 6,382 (hundred) _____
2. 47,516 (thousand) _____
3. 829,407 (ten thousand) _____
4. 3,651,288 (hundred thousand) _____
5. 72,449 (thousand) _____
6. 396,215 (ten thousand) _____
7. 8,973 (hundred) _____
8. 5,248,960 (million) _____
9. 61,850 (hundred) _____

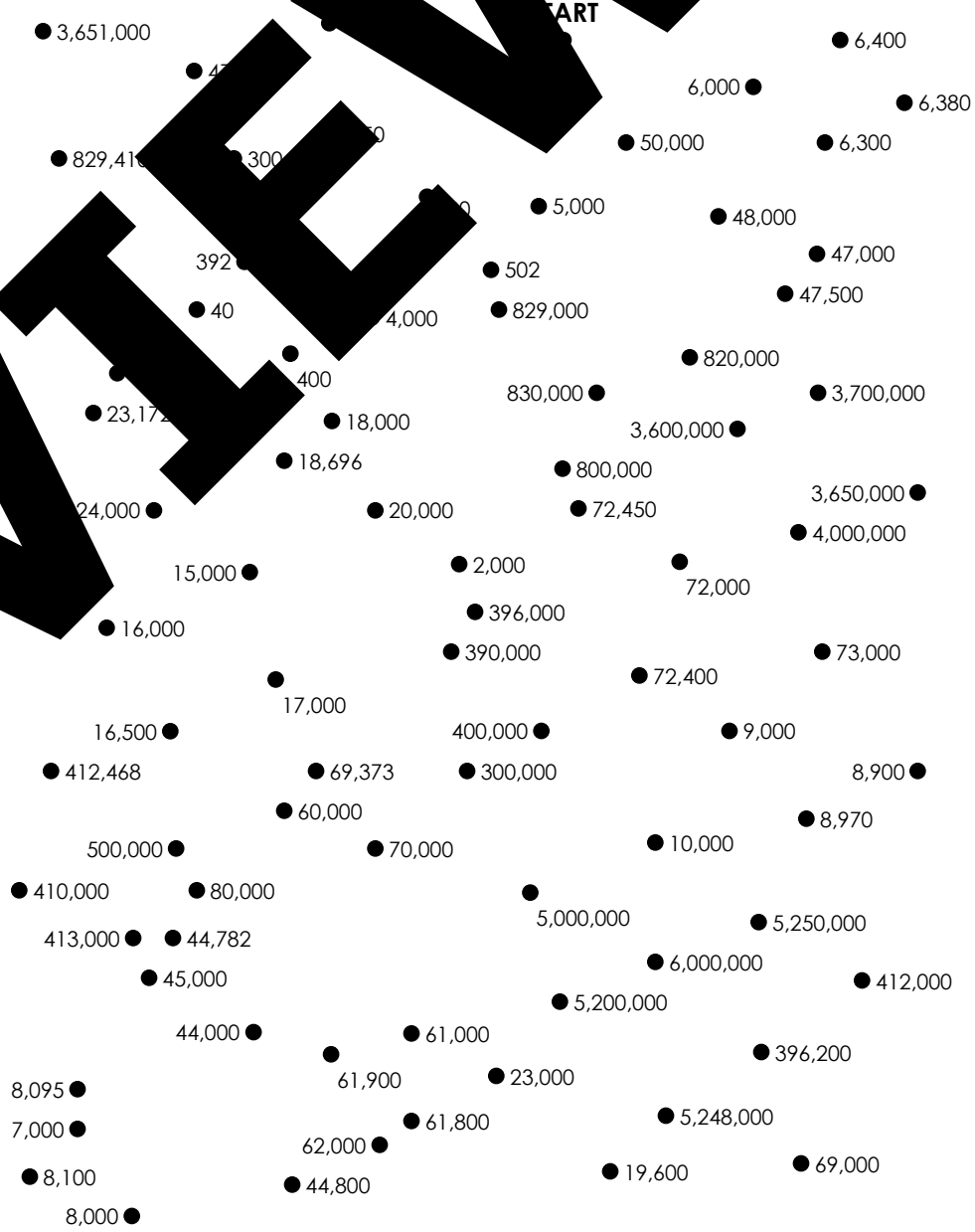
Estimate by rounding to the place in parentheses.

10. 5,816 + 2,279 (thousand) _____
11. 68,492 − 23,710 (thousand) _____
12. 41,509 + 27,864 (ten thousand) _____
13. 761,380 − 348,912 (hundred th _____
14. 25,870 − 9,415 (thousand) _____

Estimate each product by rounding [illegible] greatest place. Estimate each quotient using [illegible] numb[illegible]

15. 492 × 38 _____
16. 3,862 × 6 _____
17. 2,743 ÷ 7 _____
18. 4,519 ÷ 9 _____

Directions: Solve each problem o[illegible] Start[illegible] START, connect the dots in the order of your answers. After [illegible] START. Not every dot will be used!



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 4:** Rounding & Estimating

**** This is a 2-page document! ****

Round each number to the place indicated.

1. Round **5,482** to the nearest hundred.

2. Round **38,917** to the nearest thou

3. Round **653,275** to the nearest ten thousand.

4. Round **4,35** to the dred thousan

5. Round **73,499** to the nearest thousand.

6. Ro **603,512** t ne nearest million.

7. Round **196,304** to the n t ten thousand.

und **7,145,826** to the nearest hundred.

9. Round to .

10. Round **962,415** to the nearest hundred thousand.

11. ounding to the nearest thousand, the dance at a baseball game was 52,00 . Write the greatest and least numbers the actual attendance could have been.

12. Marco says that 64,951 rounded to the nearest thousand is 64,000. Is he correct? Explain.

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Estimate each sum or difference by rounding to the place indicated.

13. 27,621 + 8,385
(*round to the nearest thousand*)

14. 9,326 − 4,758
(round to the nearest hundred)

15. 39,488 + 16,702
(*round to the nearest ten thousand*)

16. 732,416 − 318,050
(*round to the nearest h[illegible] thou[illegible]*)

Estimate each product by rounding to the greatest place. Estim[illegible] each [illegible]ng compatible numbers.

17. 627 × 83

18. 7,264 ×

19. 5,437 ÷ 6

20. [illegible]79

21. A farm picked 2,486 apple[illegible]on M[illegible] 7[illegible] Tuesday, and 3,108 on Wednesday. Estimate to the nearest h[illegible]ed how [illegible]s were picked in all.

22. A school o[illegible]2 boxes[illegible] Each box holds 215 pencils. About how many pencils [illegible]e s[illegible]ol order?

23. A li[illegible]n puts [illegible] books on shelves that hold 7 books each. Gia says the librarian need[illegible]bout 50 s[illegible]elves. Use compatible numbers to decide whether her estimate is [illegible]able.

24. A pilot flew 3,147 miles on Monday and 1,965 miles on Tuesday. Estimate to the nearest hundred how many more miles the pilot flew on Monday.

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Name: _____

Date: _____ **Per:** _____

Math 5

Unit 1: Place Value & Whole Numbers

Quiz 1-1: Place Value, Powers of 10 & Rounding

1. Use the number **64,305,271**. What is the value of the 4?

2. Use the number **27,918,503**. What digit is in the hundred thousands place?

3. Write in standard form: *nine million, forty thousand, three h[illegible]ed tw[illegible]*

4. Write **507,016** in word form.

Word Form:

5. Write **3,080,450** in expanded form

Expanded Form:

6. In **8,800**, the value of the [illegible]ow ma[illegible]imes the value of the second 8[illegible]

7. Write **10 ×** [illegible]**0** [illegible]ponential form.

[illegible]ind th[illegible]ue of **10⁶**.

9. Find t[illegible]oduct: **73 × 10³**

10. Find the quotient: **4,900,000 ÷ 10⁴**

1. _____

2. _____

3. _____

6. _____

7. _____

8. _____

9. _____

10. _____

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11. Write in standard form: **$(5 \times 10^5) + (3 \times 10^3) + (8 \times 10^1)$**

12. Find the product: **60 × 8,000**

13. Find the quotient: **36,000 ÷ 900**

14. Round **4,628,519** to the nearest ten thousand.

15. Round **852,377** to the nearest hundred thousan

16. Estimate by rounding to the nearest thousan
46,718 + 23,385

17. Estimate the product [illegible] each factor to its greatest place: **618 × 2**

18. Estimat[illegible]uot[illegible]patible numbers: **3,148 ÷ 8**

Com[illegible] the values by filling in the circle with a <, >, or = symbol:

2,509,341 ◯ **2,590,314**

20. A town has **48,316** people. A nearby city has **103,882** people. Round both numbers to the nearest ten thousand. About how many more people live in the city?

11.	
12.	
13.	
14.	
16.	
19.	
20.	

PREVIEW

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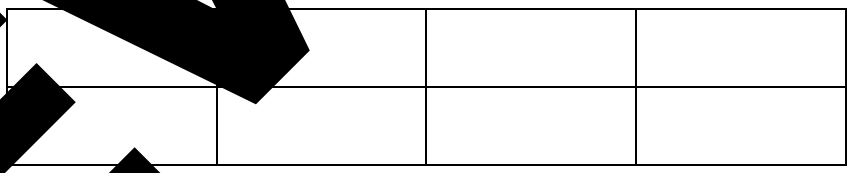
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
VOCABULARY	The numbers being multiplied are called _____ The answer to a multiplication problem is called the _____.
AREA Model	**Break apart each factor by place value.** **Multiply to find each partial product. Then add the partial products.**

EXAMPLE 1 **243 × 36**



EXAMPLE 2 **1,526**



STANDARD
Algorithm

Step 1: Multiply the top number by the _____ digit on the bottom.

Start a new row. Write a _____ in the ones place to save its spot. Then multiply the top number by the tens digit.

Step 3: _____ the two rows (partial products) to get the answer.

EXAMPLE 3

$$\begin{array}{r} 415 \\ \times\ 23 \\ \hline \\ \hline \end{array}$$

EXAMPLE 4

$$\begin{array}{r} 507 \\ \times\ 64 \\ \hline \\ \hline \end{array}$$

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YOU TRY!

Find each product using the standard algorithm.

1. 527 × 18

2. 364 × 45

3. 709 × 48

4. 648

5. 1,204 × 13

6. 4,068 × 29

APPLICATIONS

7. A [illegible] theater has 38 rows with [illegible] each row. How many [illegible]are in the theater?

8. A school ordered 145 boxes of pencils. Each box has 24 pencils. How many pencils did the school order?

9. Use estimation to check your answer to #6. Is your answer reasonable?

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WHY DID THE ROBOT *go on vacation?*

Directions: Find each product. Show all work on a separate sheet of paper. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

SET 1

G.	126 × 28	**6.**	225 × 97
O.	638 × 23	**1.**	529 × 18
C.	616 × 46	**17.**	252 × 14
I.	207 × 46	**16.**	871 × 51
R.	663 × 67	**13.**	506 ×
D.	485 × 45	**10.**	53 × 5

SET 2

E.	266 × 95	**14.**	71
N.	561 × 12	**5.**	528 ×
H.	923 × 49		105 ×
E.	219 × 35		337 × 86
D.	774 × 93	**12.**	665 × 38
E.	429 × 16	**3.**	396 × 17

SET 3

T.	3306 ×	**15.**	1474 × 42
A.	924 × 6	**4.**	7584 × 26
	8	**7.**	119 × 64
	448	**2.**	741 × 58
R	× 13	**9.**	1776 × 38
T.	91	**11.**	221 × 97

PREVIEW

ANSWER:

1.	2.		3.	4.	5.	6.	7.	8.		9.	10.		11.	12.	13.	14.	15.	16.	17.	18.	!

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 5:** Multi-Digit Multiplication

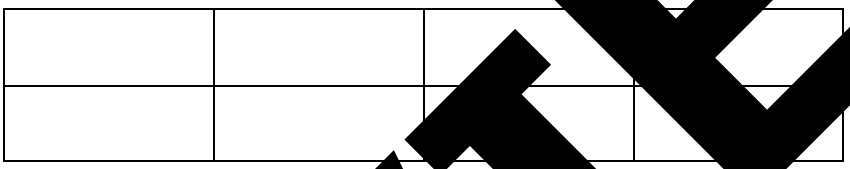
**** This is a 2-page document! ****

Use the area model to find the product.

1. 253 × 17



2. 2,486 × 39



Use the standard algorithm to find the produc

3. 72 × 48

4. 38 × 27

5. 936 × 5

6. 408 × 35

7. 3

8. 819 × 26

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9. 562 × 47

10. 3,052 × 67

11. A shoe store sold 238 pairs of sneakers for $65 each. How much money did the store make?

12. A bakery makes [illegible] bagels each day. How many bagels do they make in 28 days?

13. A plane flies 545 miles per hour. How far does it fly in 12 hours? Use estimation to check that your answer is reasonable.

14. A farmer plants 42 rows of corn with 36 plants in each row. He wants at least 1,300 plants. Did he plant enough? Explain.

15. Marissa [illegible] 283 × 46 below. Find her mistake and the correct product.

$$\begin{array}{r} 283 \\ \times\ 46 \\ \hline 1698 \\ +\ 1132 \\ \hline 2830 \end{array}$$

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

VOCABULARY

_____: the number being divided

_____: the number you divide by

_____: the answer

_____: the amount left over

Division can be written in many ways

METHOD 1:

Partial Quotients

If you are left with zero, there is **no remainder.**

If you are left with a number smaller than the divisor, **that is the remainder.**

The steps below outline using partial quotients to divide by 4.

1	Think in 100s. How many times can 4 go into 632? 100 × 4 = 400. Subtract.
2	Think in 10s. How many times can 4 go into 232? 50 × 4 = 200. Subtract.
3	Repeat until you can't subtract 4 = 32.
4	Add up the partial quotients: 100 + 50 + 8 = 158.

$$\begin{array}{r|l} 4 & 632 \\ -400 & 100 \\ \hline & 232 \\ -200 & 50 \\ \hline & 32 \\ -32 & +8 \\ \hline 0 & 158 \end{array}$$

100 + 50 + 8 = 158

632 ÷ 4 = 158

EXAMPLES

If you are left with zero, there is **no remainder.**

If you are left with a number smaller than the divisor, **that is the remainder.**

Use partial quotients to find each quotient.

1. 948 ÷ 4

2. 738 ÷ 6

3. 917 ÷ 5

4. 653 ÷ 3

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METHOD 2:
Long Division

Repeat these steps until there are no digits left.

❶ DIVIDE	❷ MULTIPLY	❸ SUBTRACT	❹ BRING DOWN
How many times does the divisor fit? Write it on top.	Multiply the top number by the divisor. Write it below.	Subtract. The answer must be smaller than the divisor.	Bring the next digit down. Then start again at step 1.

EXAMPLES

If you are left with zero, there is **no remainder.**

If you are left with a number smaller than the divisor, **that is the remainder.**

Use long division to find each quotient.

5. 756 ÷ 3

6. 4,386 ÷ 6

7. 955 ÷ 7

8. [illegible] ÷ 8

9. [illegible]035 ÷ [illegible]

10. 2,519 ÷ 4

[illegible]CATIONS

11. A baker made 1,350 cookies. She packs them into boxes of 6. How many boxes can she fill?

12. A 4-day bike race covers 1,128 miles. If riders travel the same distance each day, how many miles do they ride each day?

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 6:** Division with 1-Digit Divisors

**** This is a 2-page document! ****

Find each quotient using partial quotients or long division. Show all work.

1. 984 ÷ 4

2. 915 ÷ 3

3. 2,471 ÷ 7

4. [illegible] ÷ 8

5. 5,208 ÷ 4

6. 4,636 ÷ 5

7. [illegible]

8. 8,406 ÷ 9

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9. 1,946 ÷ 2

10. 6,388 ÷ 7

11. A school has 1,575 books to put on 5 shelves equally. How many books go on each shelf?

12. A farmer has 352 eggs. He packs 8 eggs in each container. How many containers does he fill?

13. Find the quotient of 3,705 ÷ 6. Then identify the dividend, divisor, quotient, and remainder.

14. Dylan says 4,824 ÷ 8 = 63. Use long division to find his mistake. Then find the correct quotient.

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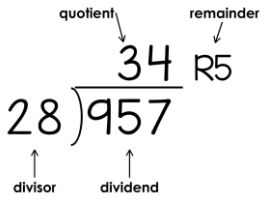
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

DIVIDING BY
2-Digit Divisors

VOCABULARY REMINDER:



Dividend: the number being divided

Divisor: the number you divide by

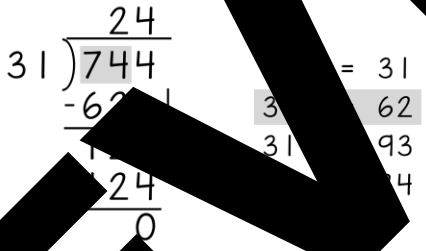
Quotient: the answer

Remainder: what's left over

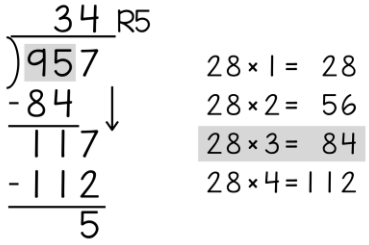
Follow the steps and examples below to divide by 2-digit divisors

1	**Look:** Underline the first digits the divisor fits into.
2	**Divide:** Round the divisor to estimate how many times it [illegible] on top. (*For example, 31 rounds to 30. How many [illegible] does [illegible] into*)
3	**Multiply:** Multiply that number by the divisor and [illegible] underneath.
4	**Subtract:** Draw a line and subtract.
5	**Bring Down:** Bring down the next [illegible]
6	**Repeat:** Go back to Step 2 [illegible] there [illegible] digits left [illegible] bring down. Whatever is left at the e[illegible] is the remainder.

Example 1 (no remainder):



Example 2 (with a remainder):



ADJUSTING
Estimates

- If the product is greater than the number you are dividing, your estimate is too _____. **Try a smaller digit.**
- If the remainder is greater than or equal to the divisor, your estimate is too _____. **Try a larger digit.**

TRY!

Find the quotient.

1. 896 ÷ 16

2. 4,757 ÷ 67

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3. 828 ÷ 36

4. 5,000 ÷ 38

5. 3,456 ÷ 32

6. [illegible] ÷ 54

APPLI[illegible]ONS

7. A sch[illegible]ing 1,230 student[illegible] a field trip. Each bus holds 58 people. How many buses will be completely filled?

8. A factory packs 6,912 crayons into boxes of 48. How many boxes does it fill?

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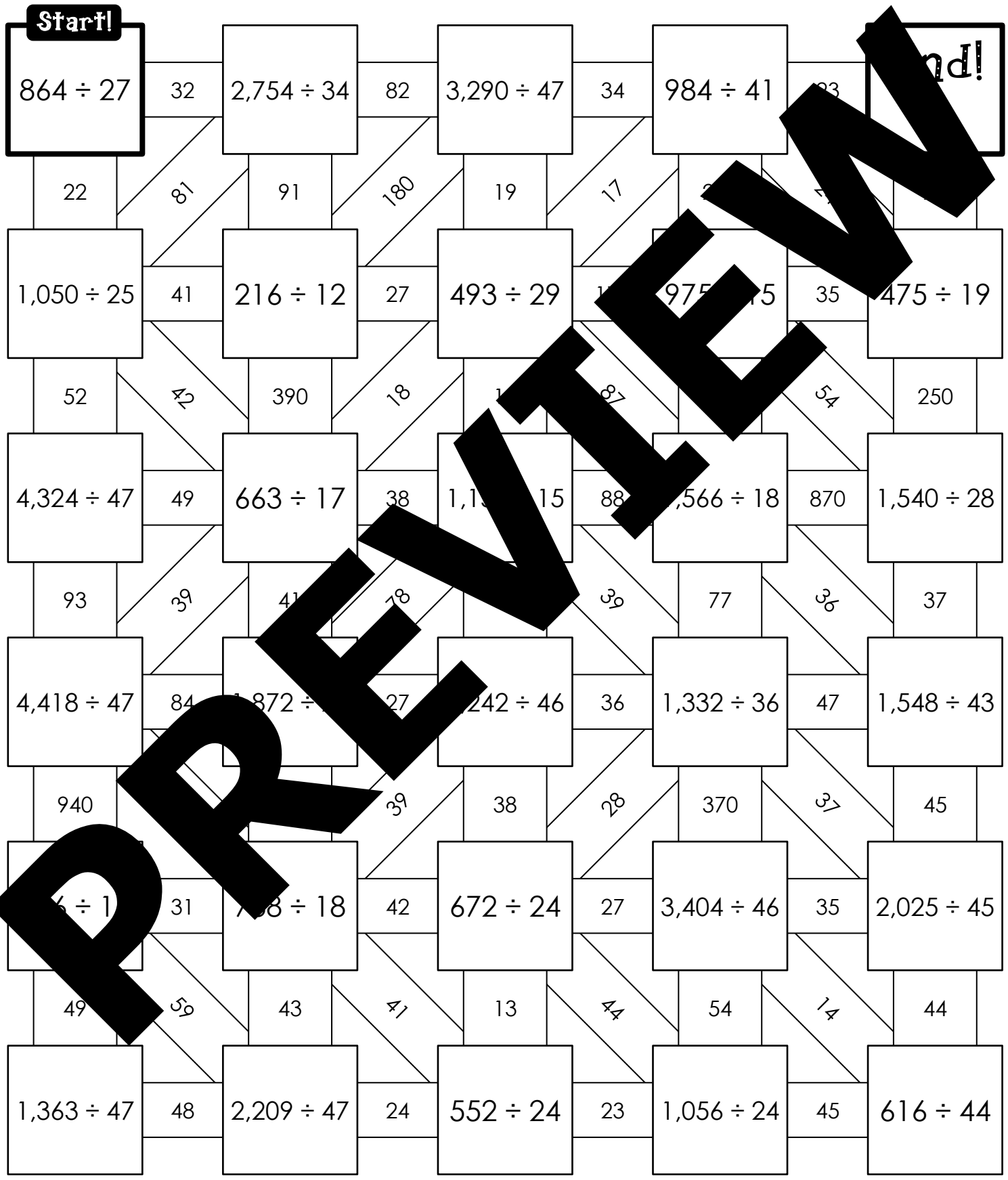
2-DIGIT DIVISORS Maze!

Directions: Find each quotient. Use your solutions to navigate through the maze.
Shade your path from Start to End as you go! SHOW ALL WORK on a separate sheet and attach it!



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 7:** Division with 2-Digit Divisors

**** This is a 2-page document! ****

Find each quotient. Show all work.

1. 672 ÷ 21

2. 918 ÷ 34

3. 853 ÷ 27

4. [illegible] ÷ 62

5. 5,513 ÷ 37

6. 8,016 ÷ 24

7. 765 [illegible]

8. 7,392 ÷ 56

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9. 6,045 ÷ 52

10. 9,361 ÷ 73

11. A concert hall collected $9,450 in ticket sales. Each ticket cost $35. How many tickets were sold?

12. A library has 450 books. Each shelf holds books. How many shelves are needed to hold all of the books?

13. Ms. P's class collected 1,976 cans in 26 days. If they collected the same number each day, how many cans did they collect each day?

14. Without dividing, explain how you know the quotient of 4,320 ÷ 72 will be less than 100.

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
REMAINDERS	When you divide in a word problem, **you must decide what the remainder means.** Read the question carefully! There are three common ways to interpret a remainder.
DROP the Remainder ***Look for:*** *How many full...? How many can be made/bought?*	**Use only the _____.** The remainder is not enough to make another full group. **Example 1** Ms. Lee has 230 stickers. She puts 12 on each page of a book. How many pages will she fill completely? **Quotient:** _____ **Remainder:** _____ **What does the remainder mean?** _____ _____ _____
ROUND UP the Quotient ***Look for:*** *How many are needed so that everyone/everything*	**Use _____ the quotient.** An extra group is needed for the remainder. **Example 2** 348 students going on a field trip. Each bus holds 45 students. How many buses are needed? **Quotient:** _____ **Remainder:** _____ **What does the remainder mean?** _____ _____ **Answer:**_____
REMAINDER the Answer ***Look for:*** *How many are left?* *How many extra?*	**The answer is the _____, or the amount left over.** **Example 3** A florist has 175 roses. She makes bouquets of 8 roses each. How many roses will be left over? **Quotient:** _____ **Remainder:** _____ **What does the remainder mean?** _____ _____ **Answer:**_____

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YOU TRY!

Solve. Check how to interpret the remainder and give your answer.

4. A factory packs 1,000 markers into boxes of 24. How many boxes can be completely filled?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

5. A ribbon is 500 inches long. Each bow uses 18 inches. How many inches of ribbon will be left over?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

6. There are 27 students in class. Each table seats 4 st... How many tables are nee... so every student has a seat?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

7. ... has ... Movie tickets cost ... each. How many tickets can ... buy?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

8. ... has 1,145 photos. Each ... holds 36 photos. How many albums does he need to hold all of his photos?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

9. A baker has 250 cookies. She puts 12 cookies in each box. How many cookies will be left over?

❑ Drop ❑ Round Up ❑ Remainder

Answer: _____

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 8:** Interpreting Remainders

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Solve each problem. Interpret the remainder and give the answer.

1. A baker has 275 muffins. She puts 12 muffins in each box. How many boxes can she fill?

2. A group of 93 people is going on a trip. Each van holds 8 people. How many vans are needed?

3. Mr. Kim has 415 pencils to share equally among 25 students. How many pencils will be left over?

4. A school needs to ship 1,250 books. Each carton holds 12 books. How many cartons are needed?

5. Leo has $15 to spend on video games. Each game costs $35. How many games can he buy?

6. A farmer has 2,150 eggs. Each carton holds 12 eggs. He sells only full cartons. How many cartons can he sell?

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7. There are 538 people at a banquet. Each table seats 10 people. How many tables are needed?

8. A pet store has 365 fish. It puts 15 fish in each tank. How many fish are in the tank that is not full?

9. Write a word problem for 75 ÷ 6 where the answer is **13**.

Solution:

10. Write a word problem for 75 ÷ 6 where the answer is **12**.

Solution:

11. Write a word problem for 75 ÷ 6 where the answer is **3**.

Solution:

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Name: _____

Date: _____ **Per:** _____

Math 5

Unit 1: Place Value & Whole Numbers

Quiz 1-2: Multiplication, Division & Remainders

1. Find the product: **1,308 × 24**

2. Find the product: **735 × 46**

3. Find the product: **294 × 58**

4. A restaurant [illegible] meals e[illegible]
How ma[illegible]eals a[illegible]t serve in [illegible]ays?

5. [illegible] quotient: **4,152 ÷ 6**

1. _____

2. _____

3. _____

4. _____

5. _____

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6. Find the quotient: **2,048 ÷ 32**

7. Find the quotient: **6,415 ÷ 28**

6. _____

7. _____

8. _____

9. _____

10. _____

For questions 8-10: Solve each problem. Then check the box that shows how you did with the remainder: **Drop** it, **Round Up** the quotient, or use the **Remainder** as the answer.

8. There are 196 students going to a museum. Each van holds 30 students. How many vans are needed?

❑ Drop ❑ Round Up ❑ Remainder

9. Ana has 500 beads. She uses 24 beads for each bracelet. How many beads will be left after she makes as many bracelets as she can?

❑ Drop ❑ Round Up ❑ Remainder

10. A factory has 3,029 crayons. It packs 7 crayons in each box. How many boxes can be completely filled?

❑ Drop ❑ Round Up ❑ Remainder

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
FACTORS	**Factors** are whole numbers **multiplied together** to get a product. Use a **T-chart** to list **factor pairs**. • Start with _____. • Stop when the factors start to _____ **Facto[illegible]30**
PRIME Numbers	• A **prime number** is a whole num[illegible] greater than [illegible] **exactly 2 factors**: 1 and itself[illegible] • **Examples:** _____
COMPOSITE Numbers	• A **composite num[illegible]** [illegible]ole numb[illegible] *[illegible]er than* 1 that has **more than two [illegible]tors.** • **Examples:** _____ • *The [illegible]rs 0 a[illegible] are _____ prime nor composite.
EXAMPLES	**[illegible] the fa[illegible] number. Is it *prime* or *composite?***

1. [illegible]	[illegible]	**3.** 2
	5. 31	**6.** 24

[illegible]IME
Num[illegible]er Hunt

Shade prime numbers.

Cross out composite numbers.

Circle if neither.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

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DIVISIBILITY
Rules

Knowing the divisibility rules can help you identify factors.

- **Divisible by 2:** The number is _____ (ends in 0, 2, 4, 6, or 8).
- **Divisible by 3:** The _____ of the digits is divisible by 3.
- **Divisible by 5:** The number ends in _____.
- **Divisible by 6:** The number is divisible by both _____ and _____.
- **Divisible by 9:** The _____ of the digits is d[illegible]9.
- **Divisible by 10:** The number ends in _____.

EXAMPLES

Helpful Hint:
Use the divisibility rules first as a quick check. If no rule works, don't forget to check 7!

Tell whether each number is *prim[illegible]ompo[illegible]er.*
If composite, write it as a [illegible]uct of two fa[illegible]

7. 51	97
9. 87	**10.** 72
11. 59	**12.** 1
[illegible]	**14.** 125
15. 135	**16.** 117
17. 102	**18.** 140

19. Explain why 2 is the only even prime number.

20. Kayla says 57 is prime because it is odd. Is she correct? Explain.

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 9:** Prime & Composite Numbers

**** This is a 2-page document! ****

List all the factors of each number. Then tell whether it is *prime* or *composite*.

1. 17	**2.** 15
3. 28	**4.** 47
5. 53	**6.** 60
7. 81	**8.** 61
9. 39	**10.** 29

Tell whether each number is *prime*, *composite*, or *neither*. If composite, write it as a product of two factors.

11. 93	**12.** 0	**13.** 133
14. 63	**15.** 89	**16.** 0
17. 119	**18.** 83	**19.** 111

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20. Circle all the prime numbers in the list below.

55 67 79 85 103 107 123 129

21. What is the greatest prime number less than 100?

22. What is the least three-digit prime number?

23. List all prime numbers between 100 and 110.

24. Write an odd composite number that is greater than 75 and less than

25. Mr. Davis has 96 chairs. He wants to arrange them in equal rows. Is 96 prime or composite? List two different ways he could arrange the chairs.

26. Nate says that the sum of two prime numbers is always even. Give an example to show that he is wrong.

27. Is 95 prime or composite? How do you know without finding all of its factors?

28. A baker has 109 cupcakes. Can she arrange them in equal rows with more than one row and more than one cupcake in each row? Explain.

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples	
PRIME Factorization	The **prime factorization** of a number is the number wri as a _____ of _____ **For example,** the prime factorization of 2 is _____	
FACTOR Trees	**A factor tree is a diagram that helps you fin prime torization.** Follow the steps below to use a factor tr find rization. ❶ Start with the number at the top. ❷ Write any _____ _____ (on the branches below it. ❸ If a factor is _____, ran g. ❹ _____ each pr When every bran nds in a p you are done! ❺ Write the circled pr as a prod rom least to greatest. ❻ Check the p s to get back to the original number.	
EXAMPLES **Side Note:** Rep factors can h with ex nts. 2 × 2 × 2³ × 3	**1.** 24	**2.** 60
DIF RENT rees	**Using 36 as an example, show how you can start with different factors but the prime factorization will be the same.**	
	36	36

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YOU TRY!	**Use a factor tree to find the prime factorization of each number.**	
	3. 18	**4.** 45
	5. 56	**6.** 72
	7. 84	100
THIN Abo	**9.** What [illegible] er h[illegible] prime factoriz[illegible] × 3 × 7?	**10.** Ty says the prime factorization of 32 is 4 × 8. Is he correct? Explain.
	11. What is the smallest number that has three different prime factors? Show its prime factorization.	**12.** What is the prime factorization of 37? Explain how you know.

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 10:** Prime Factorization

**** This is a 2-page document! ****

Use a factor tree to find the prime factorization of each number.

1. 20	**2.** 28
3. 40	**4.** 44
5. 4[illegible]	**6.** 50
54	**8.** 63

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9. 66

10. 88

11. Show how two different factor trees for 90 will lead to the same prime factorization.

12. What number has a prime factorization of $2 \times 3 \times 5 \times 5$?

What number has a prime factorization of $\times 7 \times 7$?

13. Mia says the prime factorization of 80 is $2 \times 4 \times 10$. Is she correct? Explain.

15. Write the prime factorization of 108 using exponents.

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples	
MULTIPLES	• A **multiple** of a number is the _____ of that number and any counting number (1, 2, 3, ...). • For example, list the multiples of 4: _____	
MULTIPLES vs Factors	**Using 4 × 6 = 24 as an example**	
	4 is a _____ of 24 and 24 is a _____ of 4!	
EXAMPLES	**1.** List the first six multiples of 7.	
	2. Is 63 a multiple of 9? Explain.	**3.** Is 40 a multiple of 40? Explain.
LCM (Least Common Multiple)	A **common multiple** is a multiple that two or more numbers **share.** The **least common multiple (LCM)** is the **smallest** multiple they share. **For example, find the LCM of 4 and 6:** **Multiples of 4:** _____ **Multiples of 6:** _____ The **LCM of 4 and 6** is _____.	
EXAMPLES	**Find the LCM of each pair of numbers.**	
	4. 3 and 5	**5.** 6 and 10
	6. 4 and 10	**7.** 9 and 12

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GCF
Greatest Common Factor

A **common factor** is a factor that two or more numbers **share.**

The **greatest common factor (GCF)** is the **greatest** factor they share.

For example, find the GCF of 12 and 18:

Factors of 12: _____

Factors of 18: _____

Common factors: _____

The **GCF of 12 and 18 i** _____

EXAMPLES

Find the GCF of each pair of numb

8. 16 and 24

9. 20 and 35

10. 18 and 30

11. 28 and 42

GCF or LCM

GCF	LCM
it to s ems into _____ groups with nothing left over.	Use it to find when things will happen at the _____ time again.
ords: *greatest, most, largest*	**Key words:** *least, smallest, next, again*

WORD Problems

12. Ms. Lopez has 24 pencils and 36 erasers. She wants to make identical supply bags with no supplies left over. What is the greatest number of bags she can make?

13. Hot dogs come in packs of 8. Buns come in packs of 6. What is the least number of hot dogs Jay can buy to have the same number of hot dogs and buns?

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FACTORS & MULTIPLES Message Puzzle!

Find the GCF of each pair of numbers.

1. 18 and 24

2. 32 and 48

3. 45 and 60

4. 21 and 49

5. 36 and 54

Find the LCM of each pair of numbers.

6. 3 and 8

7. 6 and 15

8. 4 and 14

9. 10 and 12

10. 8 and 10

Find the prime factorization of each number. Use exponents.

11. 135

12. 75

13. 112

Find the number described.

14. the only prime number between 47 and 50

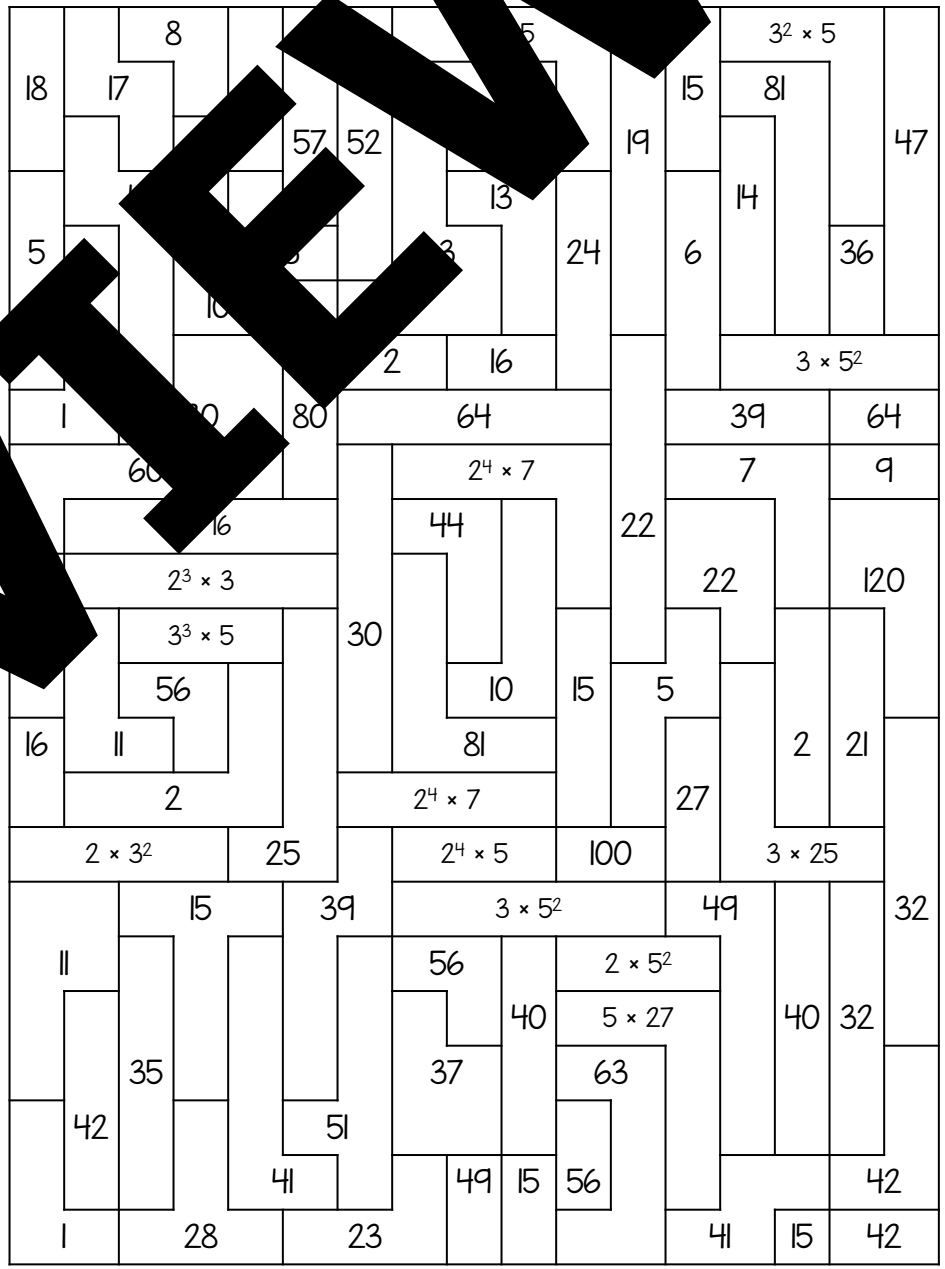
15. the smallest composite number

16. the prime factorization of every even number

17. the number of factors of 36

18. the sum of the primes between 20 and 30

Directions: Solve each problem on the left. Shade every section of the puzzle that contains one of your answers. Reveal the message. *Answers may appear in more than one section.



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 11:** Greatest Common Factor & Least Common Multiple

**** This is a 2-page document! ****

List the first five multiples of each number.	
1. 7	**2.** 8
3. 12	**4.** 25
Fill in the blank with the word "multiple" or "factor" to make the statement true.	
5. 8 is a _____ of 96	**6.** 3 is a _____ of 9
7. 7 is a _____ of 84	**8.** 5 _____ of 6
Find the LCM of each pair of numbers.	
9. 3 and 4	**10.** 5 and
11. 6 and 9	**12.** 8 and 12
Find the GCF of each pair of numbers.	
13. 12 and 20	**14.** 18 and 27
15. 24 and 40	**16.** 14 and 35

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17. List the first three common multiples of 4 and 6.

18. Name **all** the numbers between 30 and 50 that are multiples of both 4 and 6.

19. Is 15 the GCF of 30 and 45? Explain.

20. Ty says the [illegible] of 6 [illegible] because 6 × 8 = 48 [illegible] correct? [illegible]

21. A florist has 30 roses and 42 daisies. She wants to make identical bouquets using all the flowers. What is the greatest number of bouquets she can make?

[illegible] One light blinks every 6 seconds. Another light blinks every 10 seconds. They just blinked at the same time. In how many seconds will they blink at the same time again?

[illegible]. Jordan is thinking of a number. It is a multiple of 7. It is a factor of 70. It is between 10 and 30. What is Jordan's number? Explain.

24. Hot dogs come in packs of 8 and buns come in packs of 12. Maria wants to buy the same number of hot dogs and buns. What is the least number of packs of hot dogs and packs of buns she can buy?

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

ONE-STEP
Word Problems

Determine if addition, subtraction, multiplication, or division is required to solve. Then so

1. A gardener plants 18 rows of tulips. Each row has 6 tulips. How many tulips does the gardener plant?

2. A store had ... bottles. It sold ... How ... left?

3. Mia has 96 stickers. She ... them equally among ... How many stickers does each friend get?

4. ... 2,415 fiction books and ... nonfiction books. How many books does it have in all?

MULTI-STEP
Word Proble...

...ulti-...word problem needs _____ _____ _____

...ation to solve. Use a plan to keep your work organized!

1		...ead the problem carefully. What is the question asking?
2	**...LAN**	What information do you need? Which operations will you use? In what order?
3	**SOLVE**	Solve each step. Show your work and label your answer.
4	**CHECK**	Is your answer reasonable? Use estimation to check

CLUE
Words!

Addition	sum, total, in all, altogether, combined, increased by
Subtraction	difference, how many more/fewer, left, remain, decreased by
Multiplication	product, each, per, times, groups of, total for several groups
Division	quotient, share equally, split, per, each group, how many groups

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EXAMPLES

5. Ava's school raised $1,385 at a bake sale and $1,195 at a car wash. The money is split equally among 12 classrooms. How much does each classroom get?

6. A school collected 2,350 cans in Week 1 and 1,875 cans in Week 2. They pack the cans in boxes that hold 48 cans each. How many boxes do they need to pack all the cans?

7. Liam's book has 850 pages. He has already read 238 pages. If he reads 35 pages each day, how many more days will it take him to finish?

8. A bakery bakes 36 trays of muffins with 24 muffins on each tray. It packs the muffins in boxes of 12 and sells 69 boxes. How many boxes are left?

9. Tickets to a museum cost $18 each. A group of 125 students attends and also pays $390 for buses. The total cost is shared equally by 15 parents. How much does each parent pay?

10. A jacket costs $65. This week it is on sale for $18 off. Erin has $250 and buys 3 jackets on sale. With the money left, how many $12 hats can she buy?

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MULTI-STEP WORD PROBLEMS *Relay Puzzle!*

Directions: Solve the problems, using the arrows to guide you through the page. Use the answe[illegible] your [illegible]ous problem to fill in the blank in the next problem. Work through the page until you reach the end. Show all work [illegible] s[illegible]ate sheet of paper.

Start!

1 A school buys 18 boxes of markers with 24 markers in each box. It also has 36 loose markers. How many markers does it have in all?

2 The _____ markers are shar[illegible] equally among 12 classrooms. [illegible] classroom gives away 9 m[illegible]s. How many markers does [illegible] classroom hav[illegible]ft?

3 [illegible] _____ students reads 14 [illegible] the fall and 11 books in the spring. How many books do the students read in all?

4 A library has _____ books. It buys 36 boxes with 25 books in each box, then donates 450 books. How many books does it have now?

5 A th[illegible]lls _____ tickets on F[illegible]day a[illegible] ti[illegible] on Saturday. Each ticket [illegible]ow much mo[illegible] does the [illegible]ater collect?

6 Mrs. Fox has $_____. She spends $8,745 on computers and $3,615 on furniture. How many $350 tablets can she buy with the money left?

7 Each of _____ cl[illegible] collects 85 cans [illegible]day [illegible] 65 cans on T[illegible]day. [illegible] many cans do th[illegible]sses co[illegible]t in all?

8 [illegible] farm picks _____ pounds of apples in September and 2,400 pounds in October. It sells 1,500 pounds. How many pounds of apples are left?

9 A truck carries _____ pounds of 25-pound boxes. The driver unloads 48 boxes, then 36 more. The rest go on carts of 16 boxes each. How many carts are needed?

End!

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 12:** Multi-Step Word Problems

**** This is a 2-page document! ****

Determine if you need to add, subtract, multiply, or divide. Then solve.

1. A robotics club builds 14 robots. Each robot uses 25 screws. How many screws does the club use?

Operation: _____

2. A rocket needs to travel 2,040 mi… reach its target. It has alre…dy trav… 1,365 miles. How many …les a… need to travel?

Operation: _____

3. An aquarium has 144 fish. They are placed equally into 9 tanks. How many fish are … each tank?

Operation: _____

4. A…er's first vi…got 3,276 views and her …d video got 2,849 views. How many …her videos get in all?

Operati… _____

Solve ea… oblem… ow all of y… steps. Read, Plan, Solve, Check!

5. A socc… ue… from team photos a… …ancake …st. T… …ey is split equally am… 8 tea… w much money does each …m get?

6. A shoe factory made 2,154 sneakers on Monday and 1,878 sneakers on Tuesday. The sneakers are shipped in crates that hold 36 sneakers each. How many crates does the factory fill?

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7. A camp counselor buys 18 packs of glow sticks with 12 glow sticks in each pack. Of those, 24 glow sticks do not work. She shares the rest equally among 6 cabins. How many glow sticks does each cabin get?

8. A stadium has 25 sections with 48 seats in each section. It also has 16 suites with 30 seats in each suite. How many seats does the stadium have altogether?

9. A toy store receives 128 boxes with 24 action figures in each box. It sets aside 450 figures for a window display. The rest are packed into bags that hold 35 figures each. How many bags are needed to hold the rest of the figures?

10. A water [illegible] sold 1,326 [illegible]sses on Friday and 1,578 p[illegible]on S[illegible]day. Each pass cost $9. The p[illegible] made $2,145 from tubes. How much money did the water park make in all?

11. A co[illegible]op ha[illegible]4 trading cards. It sells 28[illegible]em[illegible]. It puts the rest into p[illegible]12 and sells each pack [illegible]ow [illegible]money will the shop [illegible]m the[illegible]?

12. A whale-watching company sends out 15 boats. Each boat holds 52 people. If 638 tourists and 87 guides ride the boats, how many seats are empty?

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Name: _____ **Math 5**

Date: _____ **Per:** _____ **Unit 1:** Place Value & Whole Numbers

Quiz 1-3: Primes, Factors, Multiples & Word Problems

1. a) List all the factors of **52**. **b)** Is 52 prime or composite?

2. Which number is prime? **27** **43** **49** **75**

3. Is **141** prime or composite? Explain.

4. Use a factor tree to find the prime factorization of **120**.

5. What number is the prime factorization of **2 × 2 × 3 × 3 × 5** ?

6. Create a prime factorization of **132** and show how two different factor trees lead to the same prime factorization.

1a. _____

1b. _____

2. _____

3. _____

4. _____

_____

6. _____

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7. List the first five multiples of **9**.

8. a) Find the GCF of **24 and 32**. **b)** Find the LCM of **24 and 32**.

7. _____

8a. _____

8b. _____

9. _____

10. _____

11. _____

_____

For questions 9-12: Solve each word problem. Show all your work.

9. A zoo has 1,512 pounds of hay. Each day, the elephants eat 35 pounds of hay and the giraffes eat 19 pounds of hay. How many days will the hay last?

10. A store gets 28 boxes of [illegible]ola bars with 45 [illegible] each box. The bars are split [illegible]ally an[illegible] 15 shelves. How many bars go on each shel[illegible]

11. Ben has **$**[illegible] [illegible]or $28 each and a pair of [illegible]r $54[illegible] much money does he have left?

12. A s[illegible]as 25 classes with 24 students each. All of the stude[illegible] and 22 teachers are going on a trip. Each bus holds 45 people. How many buses are needed?

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Unit 1 Test Study Guide
(Place Value & Whole Numbers)

Name: _____

Date: _____ **Per:** _____

Topic 1: Place Value & Number Forms

Use the number 43,186,725 for questions 1-4.	
1. What digit is in the ten thousands place?	**2.** What is the place of the 7?
3. What is the value of the 3?	**4.** What is 100,000 more than [illegible]?
Write each number in standard form.	
5. eight million, five hundred two thousand, sixty	**6.** 700,000 + 3[illegible] + 400 + 9
7. Write in word form: **3,250,708**	
8. Write in expanded form: **5,040,617**	
Compare the values by filling in the [illegible] with a < [illegible] = symbol.	
9. 3,407,215 ◯ 3,470,152	[illegible]y thousand, eight ◯ 60,080
Answer each question.	
11. Order the numbers from l[illegible] greate[illegible] 274,830 2[illegible] 274,3[illegible]7	**12.** In 3,300, the value of the 3 in the thousands place is _____ the value of the 3 in the hundreds place.

Topi[illegible]rs o[illegible]xponents

W[illegible]nentia[illegible]	
[illegible]10 × 1[illegible]0 × 10 × [illegible]10 × 10 × 10	
Answ[illegible]h question.	
14. Writ[illegible] as a power of 10.	**15.** Write 10^6 as repeated multiplication. Then find the value.
16. Write in expanded form using powers of 10: **1,090,300**	

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17. Write in standard form: $(4 \times 10^6) + (2 \times 10^4) + (5 \times 10^1) + 3$	**18.** How many zeros are in the standard form of 10^{11}? Write the number in standard form.
Compare the values by filling in the circle with a <, >, or = symbol.	
19. 10^5 ◯ $10 \times 10 \times 10 \times 10$	**20.** $100 \times 1{,}000$ ◯ 10^5

Topic 3: Multiplying & Dividing by Powers of 10

Find each product or quotient.	
21. 56×10^4	**22.** 9,300,000 ÷ 10^5
Use multiplication and division facts and count the zeros to multiply or divide.	
23. 70×800	**24.** 7,000 ÷ 90
Find the missing value that makes each statement true.	
25. $64 \times$ _____ = 640,000	**26.** _____ ÷ 10^3 = 52

Topic 4: Rounding & Estimating

Round each number to the place indicated.	
27. 7,358,240; hundred thousands	**28.** 46,951; hundreds
29. 283,617; ten thousands	**30.** 1,945,302; millions
Estimate each sum or difference by rounding to the place indicated.	
31. 34,[illegible] + 15,[illegible] (nearest thousand)	**32.** 8,412 − 3,675 (nearest hundred)
Estimate the product by rounding each factor to its greatest place. Estimate each quotient using compatible numbers.	
33. 6,21[illegible]	**34.** 584 × 37
35. 2,738 ÷ 9	**36.** 3,519 ÷ 68

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Topic 5: Multi-Digit Multiplication

Find each product.	
37. 486 × 29	**38.** 703 × 56
39. 2,147 × 38	**40.** 5,078 × 43

Topic 6: Division with 1-Digit & 2-Digit Div

Find each quotient. Show all w	
41. 3,528 ÷ 7	6,214 ÷ 8
2,412	**44.** 7,630 ÷ 42

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Topic 7: Interpreting Remainders

Solve each problem. Interpret the remainder and give the answer.	
45. A hotel needs to wash 340 towels. Each load of laundry holds 24 towels. How many loads are needed?	**46.** Ava has $175 to spend on swim lessons. Each lesson costs $14. How many lessons can she pay for?
47. A beekeeper collects 860 ounces of honey. She fills jars that hold 36 ounces each. How many ounces of honey will be left over?	**48.** A science lab has [illegible] magnets to share equally among [illegible]. How many magnets do each [illegible] get?

Topic 8: Prime & Composite Numbers

List all the factors of the number. Then tell whether it is prime or composite.	
49. 64	**50.** 29
Tell whether each number is prime or composite. If composite, write it as a product of two factors.	
51. 121	**52.** 139
53. 105	**54.** 115

[illegible] Prime Factorization

Use a factor tree to find the prime factorization of each number.	
55. [illegible]	**56.** 104

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Topic 10: Greatest Common Factor & Least Common Multiple

57. List the first five multiples of 15.

Find the LCM of each pair of numbers.

58. 5 and 6

59. 12 and 18

Find the GCF of each pair of numbers.

60. 27 and 36

61. 32 and 56

Topic 11: Multi-Step Word Problems

Read each problem carefully. Show all of your ste... Plan, Sol...

62. A car wash washed 286 cars for $12 each o... Saturday and 345 cars for $9 each on Sunday. How much money did the car wa... make in all?

63. ...mal shelte... 16 bags of dog food th... 25 pounds each and 8 bags that weig... each. It splits all of the food equally ...g 4 kennels. How many pounds does e... kennel get?

64. The art c... buys an ... for $1... 28 paint sets for $7 each. ...h m... ill the club have left?

65. A candle shop makes 48 candles each hour for 9 hours. It packs the candles into gift sets of 6. Each gift set sells for $8. How much money does the shop make if it sells every gift set?

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Name: _____

Date:_____ **Per:** _____

Unit 1 Test

Place Value & Whole Numbers

1. Write the number below in standard form.

"Nine million, two hundred thousand, eighty-five"

2. Which statement about the number below is true?

58,407,132

A. There is a 4 in the ten th
B. There is an 8 i illions
C. There is a 1 in th
D. There is the hu

Use the number 26,483,150 for questions 3 and 4.

3. What is the value of the 6?

4. Round to the nearest hundred thousand

5. Which shows the number below in expanded form?

3,070,204

A. 3,000,000 + 700,000 + 4
B. 300,000 + 70,000 +
C. 3,000,000 + 70,000 + 2
D. 3,000,000 + + 200 +

6. The value of the 3 in 230,000 is how many times the value of the 3 in 13,000?

A. 10
B. 100
C. 1,000
D. 10,000

7. Which val to 100,0 heck all that apply.

- ☐ 10^5
- ☐ 000 × 100
- ☐ 100 × 100
- ☐ 10 × 5
- ☐ 10×10^4

8. Which ws 704,08 expanded form using ow f 10?

A. $(7 \times 10^6) + (4 \times 10^4) + (8 \times 10^2)$
B. $(7 \times 10^5) + (4 \times 10^4) + (8 \times 10^1)$
C. $(7 \times 10^4) + (4 \times 10^3) + (8 \times 10^1)$
D. $(7 \times 10^5) + (4 \times 10^3) + (8 \times 10^1)$

9. Find the product.

83×10^5

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10. Find the product.

50 × 700

A. 3,500
B. 35,000
C. 350,000
D. 3,500,000

11. Find the quotient.

6,300 ÷ 70

12. Round 8,371,652 to the nearest ten thousand.

13. Estimate the difference by rounding each number to the nearest thousand.

837 − 2

A. 4,
B. 4,400
4,418
000

14. Which numbers round to 450,000 when rounded to the nearest ten thousand? Check all that apply.

- ☐ 449,512
- ☐ 455,000
- ☐ 405,000
- ☐ 445,0
- ☐ 444,999
- ☐ 454,999

15. Estimate the quotient using compatible numbers.

3,184 ÷

A. 4
B. 40

d the product.

657 × 74

A truck carries 146 crates. Each crate holds jars. How many jars does the truck carry?

A. 5,256
B. 5,156
C. 6,256
D. 52,560

18. Find the quotient.

4,332 ÷ 6

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19. Find the quotient.

6,804 ÷ 28

20. Find the quotient.

9,215 ÷ 43

21. There are 315 people going on a boat tour. Each boat holds 24 people. How many boats are needed?

A. 3 boats
B. 13 boats
C. 14 boats
D. 15 boats

22. A pet [illegible] has [illegible]og treats. It puts 18 treats [illegible]. How many bags can it fill [illegible]mplet[illegible]

A. 4 bags
B. 27 bags
C. 28 bags
D. 30 bags

23. Which numbers are pr[illegible]k all that apply.

☐ [illegible] ☐ [illegible] ☐ 25 ☐ 29 ☐ 35 ☐ 23

24. Which list s[illegible] of the factors of 76?

A. 1, 2, 19, 38, 76
B. 1, 2, 4, 19, 76
C. 2, 4, 19, 38
D. 1, 2, 4, 19, 38, 76

25. Write the prime factorization of 84.

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26. What is the greatest common factor of 45 and 75?

27. What is the least common multiple of 6 and 8?

A. 2
B. 14
C. 24
D. 48

28. Which numbers are common multiples of 4 and 5? Check all that apply.

☐ 45 ☐ 20 ☐ 30 ☐ [illegible] ☐ [illegible] ☐ 80

29. A school buys 14 boxes of pencils with 36 pencils in each box. It gives 120 pencils to the art club. It shares the rest equally among 8 classrooms. How many pencils does each classroom get?

30. Olivia has $220. She buys 4 games for $38 each and a headset for $65. How much money does she have left?

A. $103
B. $168
C. $217
D. $255

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

WHOLE NUMBERS

Whole numbers are the Counting numbers, including zero.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 1[illegible] ...

PLACE VALUE

Each digit in a whole number has a[illegible]e tha[illegible]ed by its position, or *place*, in the num[illegible]he chart be[illegible] the place value of each di[illegible]he n[illegible]er 4,709,[illegible]

MILLIONS			THO[illegible]			ONES		
Hundred Millions	Ten Millions	Millions	Hu[illegible] Th[illegible]s	Ten Thousands	[illegible]ds	[illegible]reds	Tens	Ones
		4	7	0	[illegible]	3	8	2

In the number [illegible]e, the di[illegible]he hundred thousands place. [illegible]alue is 700,000.

PLACE VALUE
Patterns

E[illegible] place [illegible] times the place to its **right.**

Each [illegible]ce is worth $\frac{1}{10}$ of the place to its **left.**

[illegible]	[illegible]ds	Ten Thousands	Thousands	Hundreds	Tens	Ones
1,0[illegible]	[illegible]0,000	10,000	1,000	100	10	1

× 10 × 10 × 10 × 10 × 10 × 10

$\frac{1}{10}$ of $\frac{1}{10}$ of $\frac{1}{10}$ of $\frac{1}{10}$ of $\frac{1}{10}$ of $\frac{1}{10}$ of

[illegible]s:

- The thousands place is worth 10 times the hundreds place.
- The ones place is worth $\frac{1}{10}$ of the tens place.
- The hundreds place is worth 10 times the tens place.

E[illegible]PLES

Use the number **37,816,054** for questions 1-5.

1. What is the place and value of the 8?

Place: hundred thousands Value: 800,000

2. What digit is in the ten thousands place? 1

3. What is the value of the 7? 7,000,000

4. What is 10,000 more than this number? 37,826,054

5. What is 100,000 less than this number? 37,716,054

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NUMBER
Forms

Use **2,406,510** as an example for each form

Standard Form	A number written using digits and commas.
Word Form	A number written in words. two million, four hundred six thousand, five hundred ten
Expanded Form	A number written as the sum of the values of its digits. 2,000,000 + 400,000 + 6,000 + 500 + 10

EXAMPLES

Write each number in standard form.

6. eight hundred fifty thousand, twelve — 850,012

7. three million, sixty thousand, four hundred — 3,060,400

Write the number in word form.

8. 405,230

Four hundred five thousand, two hundred thirty

Write the number in expanded form.

9. 6,075,310

6,000,000 + 70,000 + 5,000 + 300 + 10

COMPARING
Whole Numbers

To compare whole numbers, line up the place values. Start on the left and compare the digits in each place until they are different.

Compare the values by filling in the circle with a <, >, or = symbol.

10. 4,516,207 (<) 4,561,027

11. 709,880 (<) 790,088

12. 2,000,301 (>) 2,000,031

13. ninety thousand, nine (=) 90,009

ORDERING
Whole Numbers

14. Order the numbers from **least to greatest**:

63,415 63,154 6,341,500 634,150

63,154 63,415 634,150 6,341,500

15. Order the numbers from **greatest to least**:

829,070 8,290,700 82,079 82,907

8,290,700 829,070 82,907 82,079

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 1:** Place Value & Number Forms

**** This is a 2-page document! ****

Use the number **52,948,163** for questions 1-6.

1. What digit is in the hundred thousands place? 9	**2.** What is the place of the [illegible] ten thousands
3. What is the value of the 2? 2,000,000	**4.** What is the value [illegible] 6
5. What is 1,000 more than the number? 52,949,163	**6.** What is [illegible]0,000 less than the [illegible]ber? [illegible]163

Answer each question.

7. What digit is in the ten millions place of **161,504,961?** 6	**8.** [illegible]s the nam[illegible] place (not the v[illegible]f the 7 in [illegible],215? ten [illegible]sands
9. What is 100,000 more than **4,562,708?** 4,662,708	**10.** What is [illegible]alue of the underlined digit in **26,34[illegible]?** 40,000
11. What is the greatest 7 [illegible] number that [illegible]peating digits and a 5 in the thousands place? 9,[illegible]	

Write each nu[illegible]n stand[illegible]rm.

12. six hu[illegible]d thi[illegible]ousand, t[illegible]undred eight	630,208
13. [illegible] mill[illegible]ety-one thousand, seventeen	4,091,017
14. ei[illegible]-five thou[illegible]nd, six	85,006
15. [illegible]illions + 6 hundred thousands + 4 tens	3,600,040
16. 900,000 + 40,000 + 300 + 7	940,307
17. 5,000,000 + 80,000 + 9	5,080,009

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Write each number in word form.

18. 72,405

Seventy two thousand, four hundred five

19. 309,160

three hundred nine thousand, one hundred six

20. 5,008,042

five million, eight thousand, forty tw

Write each number in expanded form.

21. 46,302

40,000 + 6,000 + 300 + 2

22. 805,190

800,000 + 5,000 + 100 + 90

23. 7,260,054

7,000,000 + 200,000 + [illegible] + 4

Compare the values by fill[illegible] the circle wi[illegible]r = symbol.

24. 381,402 (>) [illegible]

25. 6,050,000 (<) 6,500,000

26. 90,909 [illegible] 90,990

27. seventy thousand, sixty (<) 70,600
70,060

28. Orde[illegible]umb[illegible]**t to greatest.**

45,812 [illegible]20 45,128 4,581,200

[illegible]28 45,812 458,120 4,581,200

29. The [illegible]pulations of three cities are shown below. Order the populations from [illegible]**est to least.**

[illegible]pton: 1,204,563 Ashford: 1,240,356 Milton: 1,042,653

[illegible]rd
1,2[illegible]356 Hampton
1,204,563 Milton
1,042,653

30. Marcus says that the value of the 6 in 563,201 is 6,000. Is Marcus correct? Explain.

No; the 6 is in the ten thousands place, so its value is 60,000.

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

EXPONENTS

An **exponent** tells how many times a number, called the base, is used as a f[illegible]

base → 10 2 [illegible]

10^2 = 10 · 10 [illegible] 00

- 10^2 is read as "ten to th[illegible] Decor[illegible] ower" [illegible] en squared."
- 10^3 is read as "ten [illegible] ird [illegible] or "ten cubed."

POWERS of Ten

A *power of 10* is [illegible] mber th[illegible] b[illegible] written using 10 as the base.

Exponential Form	R[illegible]ed Multiplic[illegible]	Standard Form	Number of Zeros
10^1	[illegible] 10	10	1
10^2	[illegible] × 10	100	2
[illegible]	10 × 10 × 10	1,000	3
[illegible]	[illegible] × 10 × 10 × 10	10,000	4
10[illegible]	10 × 10 × 10 × 10 × 10	100,000	5
[illegible]	10 × 10 × 10 × 10 × 10 × 10	1,000,000	6

PATTERN: The exponent on a power of 10 tells the number of zeros in the standard form.

[illegible]MPLES

Write each product in exponential form.

1. 10 × 10 × 10 × 10 10^4	**2.** 10 × 10 × 10 × 10 × 10 × 10 × 10 10^7

Find the value of each power.

3. 10^5 100,000	**4.** 10^2 100

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Write each number as a power of 10.

5. 1,000,000

10^6

6. 10,000

10^4

EXPANDED Form

Powers of 10 can be used to write numbers in expanded form.

Standard form	**5,307**
Place values	5 thousands + 3 hundreds + 0 tens + 7 ones
Expanded form	$(5 \times 1000) + (3 \times 100) + (0 \times 10) + (7 \times 1)$
Using exponents	$(5 \times 10^3) + (3 \times 10^2) + (0 \times 10^1) + (7 \times 1)$

7. Write **42,060** in expanded form using powers of 10.

$(4 \times 10^4) + (2 \times 10^1) + (6 \times 1)$

8. Write **305,708** in expanded form using powers of 10.

$(3 \times 10^5) + (5 \times 10^3) + (7 \times 10^2) + (8 \times 1)$

9. Write in standard form: $(1 \times 10^5) + (1 \times 10^3) + (8 \times 10^2) + 4$

101,804

Write in standard form: $(6 \times 10^4) + (3 \times 10^2) + (7 \times 10^1) + 2$

60,372

COMPARING Powers

Compare values by filling in the circle with a <, >, or = symbol.

11. 10^3 (>) 1,000

12. 100,000 (=) 10^5

APPLICATIONS

13. A video was viewed about 10^6 times. Write this number in standard form and word form.

1,000,000 ; one million

14. Jayden says that $10^4 = 40$. What mistake did he make? What is the correct value?

$10^4 = 10 \times 10 \times 10 \times 10 = 10{,}000$; He multiplied $10 \times 4 = 40$.

15. A town has a population of 10^4. A city has 10 times as many people. Write the city's population as a power of 10 and in standard form.

10^5 ; 100000 people

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ Per: _____ **Homework 2:** Powers of 10 & Exponents

**** This is a 2-page document! ****

Write each product in exponential form.

1. $10 \times 10 \times 10 \times 10 \times 10$

10^5

2. 10×10

10^2

3. $10 \times 10 \times 10$

10^3

4. $10 \times 10 \times 10 \times 10 \times$

10^6

Write each power as repeated multiplication. Then find the value.

5. 10^3

$10 \times 10 \times 10 = 1{,}000$

6. 10^6

$10 \times 10 \times 10 \times 10 \times 10 \times 10$

$= 1{,}000{,}000$

7. 10^7

$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

$= 10{,}000{,}000$

8. 10^9

$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

$= 1{,}000{,}000{,}000$

Write each number as a power of 10.

9. 100

10^2

10. 100,000

10^5

11. 10

10^1

12. 10,000,000

10^7

Find the value of each power.

13. 10^4

10,000

14. 10^1

10

15. 10^8

100,000,000

16. 10^{10}

10,000,000,000

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Write each number in expanded form using powers of 10.

17. 6,250

$(6 \times 10^3) + (2 \times 10^2) + (5 \times 10^1)$

18. 81,407

$(8 \times 10^4) + (1 \times 10^3) + (4 \times 10^2) + (7 \times 1)$

19. 300,090

$(3 \times 10^5) + (9 \times 10^1)$

Write each number in standard form.

20. $(7 \times 10^4) + (3 \times 10^2) + (6 \times 10^1)$

70,360

2[illegible] [illegible] $\times 10^6) + ($[illegible]

2,0[illegible]008

Compare the values by filling in the circle wit[illegible] >, or = [illegible]bol.

22. 10^6 (>) 100,000

10^5

[illegible]0^3 (=) $10 \times 10 \times 10$

10^3

24. 10^2 (>) 20

10^0

25. 1,000,000 (<) 10^7

10^6

26. How ma[illegible] in the st[illegible] form of 10^{12}[illegible]

27. A power of 10 has 8 digits in its standard form. Write this number as a power of 10.

10^7

Orde[illegible]se from [illegible]st to greatest:
[illegible]^8 [illegible]00, 10^1, $10 \times 10 \times 10 \times 10$

[illegible]100, $10 \times 10 \times 10 \times 10$, 10^8

29. A bakery packs 10 muffins in a box, 10 boxes in a case, and 10 cases on a pallet. How many muffins are on one pallet? Write it as a power of 10.

10^3

30. Is 20,000 a power of 10? Explain how you know.

No; powers of ten have only one and zeros as digits

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

MULTIPLYING
by Powers of 10

Look for a pattern!

Expression	Exponential Form	Number of Zeros	[illegible]
34 × 10	34×10^1	[illegible]	[illegible]0
34 × 100	34×10^2	2	[illegible]0
34 × 1,000	34 × [illegible]	[illegible]	34,000
34 × 10,000	34 [illegible] 10	4	340,000

When you multiply a w[illegible]ber by a [illegible]0:

- Each digit mov[illegible] ret[illegible]e place [illegible] every zero in the power of 10.
- Each place to th[illegible] makes its [illegible] 10 times as much.

Shortcu[illegible]

- [illegible] Ze[illegible] end of the whole number, one for every [illegible]ero in the power [illegible] for the exponent in exponential form.

Note: This shortcut only works for whole numbers!

DIVIDING
by Pow[illegible]

Look for a pattern!

[illegible]	Exponential Form	Number of Zeros	Quotient
520[illegible] ÷ 10	$520{,}000 \div 10^1$	1	52,000
[illegible],000 ÷ 100	$520{,}000 \div 10^2$	2	5,200
520,000 ÷ 1,000	$520{,}000 \div 10^3$	3	520
520,000 ÷ 10,000	$520{,}000 \div 10^4$	4	52

When you divide a whole number by a power of 10:

- Each digit moves right one place for every zero in the power of 10.
- Each place to the right makes its value $\frac{1}{10}$ as much.

Shortcut:

- Cross out one zero from the end of the whole number for every zero in the power of 10, or for the exponent in exponential form.

Note: The number must end in at least that many zeros!

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EXAMPLES	**Find each product or quotient.**	
	1. 76 × 1,000 76,000	**2.** 405 × 10^2 40,500
	3. 9 × 10^5 900,000	**4.** 62 × 10,000 620,00[illegible]
	5. 830,000 ÷ 100 8,300	**6.** 6,00[illegible] 10^4 60[illegible]
	7. 70 × 10^3 70,000	7,20[illegible] ÷ 10^3 [illegible],20[illegible]
MULTIPLES of 10	**Use multiplication an[illegible]cts and c[illegible] zeros to multiply or divide.**	
	9. 30 × 400 12,0[illegible]	[illegible] × 4,000 2,400,000
	11. [illegible]0 ÷ 6[illegible] 40[illegible]	**12.** 3,500,000 ÷ 700 5,000
	[illegible]800 4[illegible]	**14.** 420,000 ÷ 70 6,000
MISS[illegible] [illegible]alues	[illegible] 1,000 = 58,000	**16.** 47,000 ÷ 10^2 = 470
	17. 3 × $10^{\boxed{6}}$ = 3,000,000	**18.** 910,000 ÷ 10,000 = 91
A[illegible]CATIONS	**19.** A pencil company packs 1,000 pencils in each case. How many pencils are in 45 cases? 45 × 1000 = 45,000 pencils	
	20. A town of 270,000 people is split evenly into 10^2 voting districts. How many people are in each district? 270,000 ÷ 10^2 = 2,700 people	

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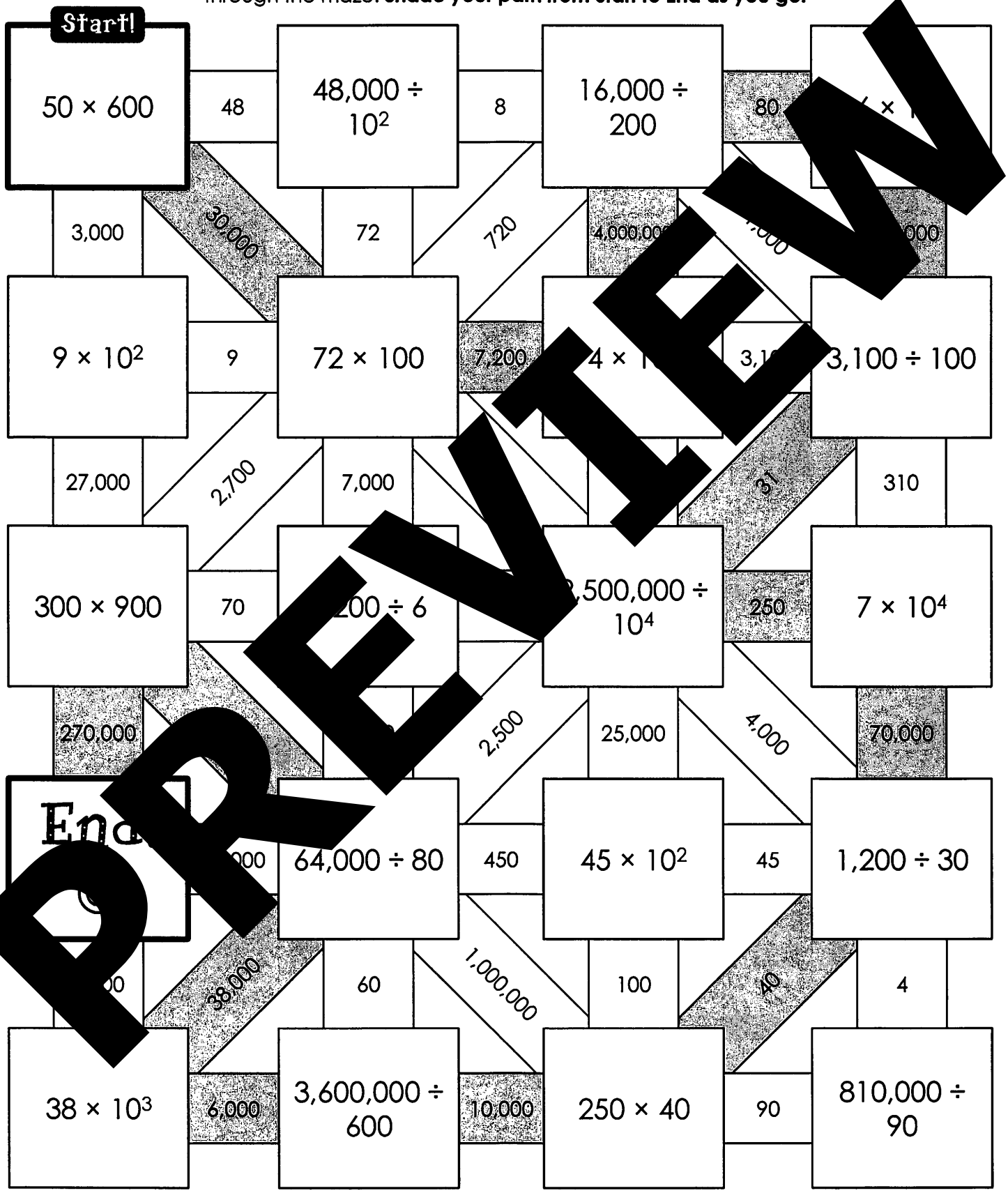
ANSWER KEY

POWERS OF 10 Maze!

Directions: Find each product or quotient. Use your solutions to navigate through the maze. **Shade your path from Start to End as you go!**



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 3:** Multiplying & Dividing by Powers of 10

**** This is a 2-page document! ****

Find each product or quotient.

1. 63×100

6,300

2. 8×10^4

80,000

3. $520 \times 1{,}000$

520,000

4. 39×10^3

39,000

5. $9{,}000 \div 10$

900

6. $610{,}000 \div 10^2$

6,100

7. $7{,}100{,}000 \div 1{,}000$

7,100

8. $8{,}000{,}000 \div 10^5$

80

9. 306×10^2

30,600

10. 15×10^6

15,000,000

Identify the multiplication and division facts and count the zeros to multiply or divide.

11. 40×200

8,000

12. 500×60

30,000

13. $8{,}000 \times 900$

7,200,000

14. $4{,}800 \div 80$

60

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15. $56{,}000 \div 70$

800

16. $2{,}000{,}000 \div 40$

50,000

17. $90 \times 3{,}000$

270,000

18. $360{,}000 \div 9{,}000$

40

Find the missing value that makes each statement true.

19. $29 \times$ ___10^6___ $= 29{,}000{,}000$

20. $6 \times$ [illegible]600

21. ___380,000___ $\div 10^3 = 380$

22. [illegible]$000 \div$ [illegible] $= 85$

23. ___71___ $\times 10^4 = 710{,}000$

24. ___90,[illegible]___ $\div 10^4 = 9$

25. A stadium has 10^4 seat[illegible]ch seat cost[illegible] $35 for a concert. H[illegible]uch [illegible]ney is collected if every [illegible]so[illegible]

$\$35 \times 10^4$ =$\$35$[illegible]

26. [illegible] grocery store ordered 6,400 apples. The apples come in crates of 100. How many crates did the store order?

$6400 \div 100$

= 64 crates

27. A sc[illegible]listri[illegible]aptops for $400 e[illegible]otal cost?

$\times$[illegible] = $120,000

28. Explain why 84×10^3 and 840×10^2 have the same product.

$84 \times 10^3 = 84{,}000$

$840 \times 10^2 = 84{,}000$

840 is 84×10^1 so it needs one less power of 10.

29. [illegible]ra says $3{,}000 \div 10^2 = 3$. Do you agree? E[illegible]n.

No; $3{,}000 \div 10^2 = 30$.

Since the exponent is 2, she should remove 2 zeros instead of 3.

30. A factory packs 250 pencils in each box. How many pencils are in 10^3 boxes?

$250 \times 10^3 =$ 250,000 pencils

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
ROUNDING Whole Numbers	**Rounding a number makes it simpler to work with.** A rounded number is close to the ex[illegible]er. ➡ For example, let's use the number li[illegible]elow [illegible]und **46,708** to *the neare[illegible]thou[illegible]*  **46,708** is [illegible]r to [illegible]20[illegible].
STEPS for Rounding	❶ Underline th[illegible]git in th[illegible]e you are rounding to. ❷ Look at the digit right ❸ If tha[illegible] 5 [illegible]r more, round up. [illegible]at digit is [illegible]r less, round down. [illegible] every digit to the right of the underlined digit to zero.
EXAM[illegible]E	[illegible]81,560 to the... / Rounded Number nearest ten: 3,481,560 nearest hundred: 3,481,600 nearest thousand: 3,482,000 nearest ten thousand: 3,480,000 nearest hundred thousand: 3,500,000 nearest million: 3,000,000
WATCH OUT FOR 9'S!	• Round **2<u>9</u>7,850** to the nearest ten thousand: 300,000 • Round **49,<u>9</u>62** to the nearest hundred: 50,000 • Round **59<u>9</u>,712** to the nearest thousand: 600,000

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More EXAMPLES

1. Round **364,532** to the nearest thousand.

365,000

2. Round **58,296** to the nearest ten.

58,300

3. Round **41,627** to the nearest hundred.

41,600

4. Round **835,104** to the nearest ten thousand.

840,0

5. Round **2,749,380** to the nearest hundred thousand.

2,700,000

6. Rou to the nearest hundre

,000

7. Round **492,318** to the nearest ten thousand.

490,000

8. Round **39,99** to the nearest

,000

9. Round **5,617,280** to the nearest million.

10. Round **309,148** to the nearest thousand.

309,000

APPLICATIONS

11. Stadium sold 68,45 tickets for a football game. Round the number of tickets to the nearest thousand.

,000 tickets

12. A used car is listed for $14,862. About how much does the car cost, rounded to the nearest hundred dollars?

$14,900

13. Rounded to the nearest hundred, 1,600 people attended a concert. What is the greatest number of people that could have actually attended?

1,649 people

14. Rounded to the nearest thousand, the population of a small town is 25,000. What is the least number of people that could actually live in the town?

24,500 people

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
ESTIMATING	An **estimate** is an answer that is close to the exact answer. Use an estimate when an exact answer is not needed or to check if an answer is reasonable.
SUMS & DIFFERENCES	**Round each number to the same place, then add or subtract.** **1.** Estimate by rounding to the nearest thousand: 4,87[illegible] 5,000 + 3,000 = 8[illegible] **2.** Estimate by rounding to the nearest thousand: 62,[illegible]1,904 − 28,350 62,000 − 28,000 = 34,000 **3.** Estimate by rounding to the nearest hundred: 1,648 + 2,391 1,600 + 2,400 = 4,000 **4.** Estimate by rounding to the nearest ten thousand: 83,217 − 46,905 80,000 − 50,000 = 30,000
PRODUCTS	**Round each factor to its greatest place, then multiply.** **5.** 386 × 52 400 × 50 = 20,000 **6.** 4,190 × 7 4,000 × 7 = 28,000 **7.** 2,875 × 41 3,000 × 40 = 120,000 **8.** 6,308 × 9 6,000 × 9 = 54,000

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QUOTIENTS

Use compatible numbers: numbers that are easy **to divide mentally. Think of a basic fact!**

9. 2,738 ÷ 9

2,700 ÷ 9 = 300

10. 4,215 ÷ 62

4,200 ÷ 60 = [illegible]

11. 3,175 ÷ 8

3,200 ÷ 8 = 400

12. 5,640 ÷ 71

5,600 ÷ [illegible]

APPLICATIONS

13. The Riverside Zoo needs at least [illegible] visitors over the weekend to meet its goal. It had 2[illegible] visitors on [illegible]day and 3,129 visitors on Sunday. Estimate to the nearest hundred to decide whether the zoo met its goal.

2,800 + [illegible]00 = [illegible]

No, 5,900 is less than 6,500.

14. A stadium has 50,[illegible] seats. At Friday's game, 28,760 seats were filled. Estimate the number of empty seats to the nearest thousand.

4[illegible]00 − 29,000 = 12,000

About 12,000 empty seats.

15. A bakery baked 18 trays of cookies with 36 cookies on each tray. The owner says she baked more than 1,000 cookies. Use estimation to decide whether her claim is reasonable.

20 × 40 = 800

Not reasonable; 800 is less than 1,000.

16. A theater collected $4,865 from ticket sales for a show. Every ticket cost $7. About how many people attended the show?

4900 ÷ 7 = 700

About 700 people

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ROUNDING & ESTIMATING Connect the Dots!

Round each numbe… … parentheses.

1. 6,382 (hun… 6,400
2. 47,516 (thousand) 48,000
3. 829,407 (ten thousa… …,000
4. 3,651,288 (hundred thousand… 3,7…00
5. 72,449 (thousand) …0
6. 396,215 (ten thousand) …,000
7. 8,973 (hundred) 9,00…
8. 5,248,960 (million) …00
9. 61,850 (hundred) 61,…

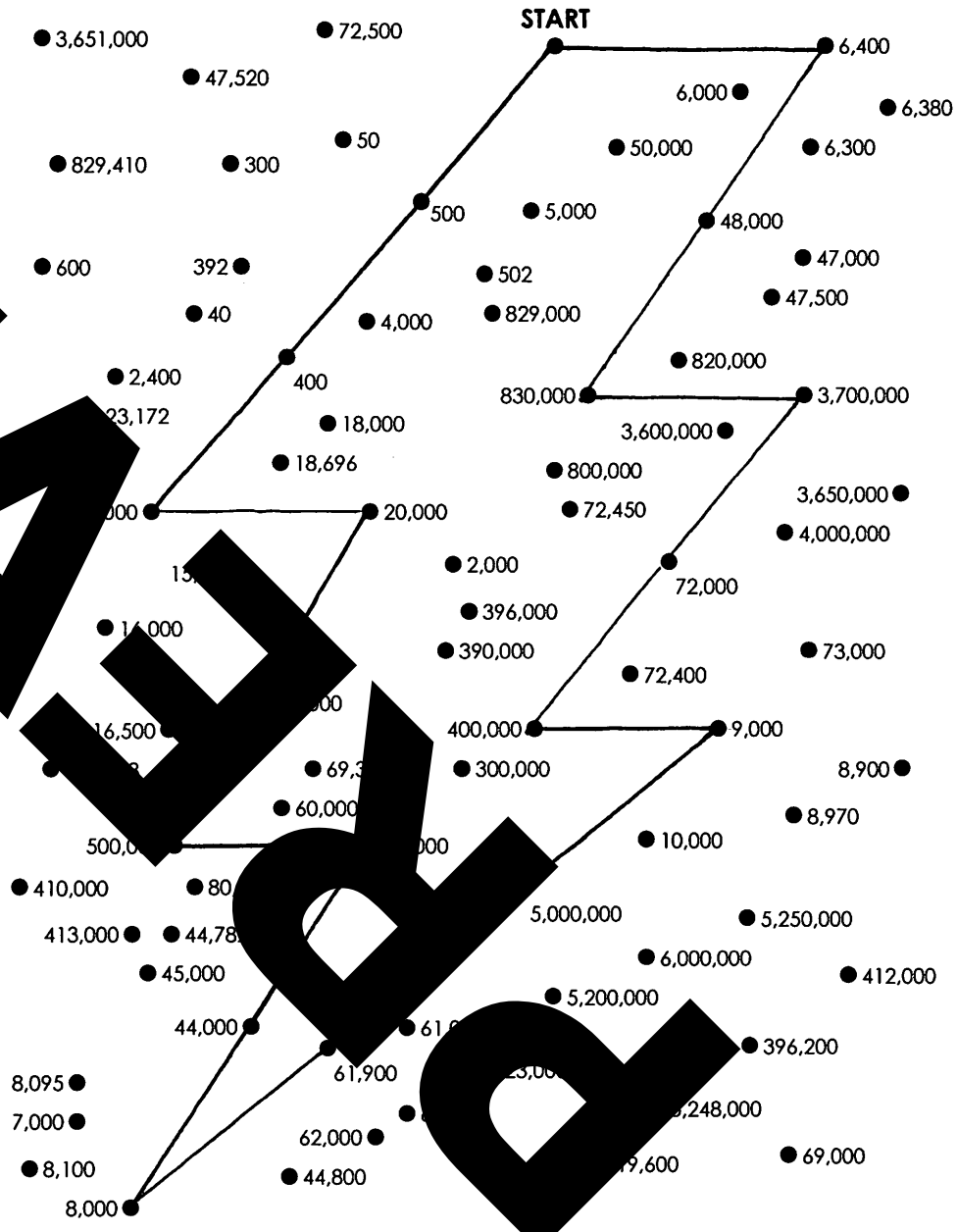
Estimate by rounding to the place in parentheses.

10. 5,816 + 2,279 (thousand) 8,000
    6,000 + 2,000
11. 68,492 − 23,710 (thousand) 44,000
    68,000 − 24,000
12. 41,509 + 27,864 (ten thousand) 70,000
    40,000 + 30,000
13. 761,380 − 348,912 (hundred thousand) 500,000
    800,000 − 300,000
14. 25,870 − 9,415 (thousand) 17,000
    26,000 − 9,000

Estimate each product by rounding to the greatest place. Estimate each quotient using compatible numbers.

15. 492 × 38 500 × 40 20,000
16. 3,862 × 6 4,000 × 6 24,000
17. 2,743 ÷ 7 2800 ÷ 7 400
18. 4,519 ÷ 9 4500 ÷ 9 500

Directions: Solve each problem on the left. Starting at START, connect the dots in the order of your answers. After #18, connect back to START. Not every dot will be used!



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 4:** Rounding & Estimating

**** This is a 2-page document! ****

Round each number to the place indicated.

1. Round **5,482** to the nearest hundred.

5,500

2. Round **38,917** to the nearest thou

39,000

3. Round **653,275** to the nearest ten thousand.

650,000

4. Round **4,35** to the n dred thousan

5. Round **73,499** to the nearest thousand.

73,000

6. Ro **03,512** to the nearest million.

1 ,000,000

7. Round **196,304** to the n st ten thousand.

200,000

und **7,145,826** to the nearest hundred.

7,145,800

9. Round to n.

10. Round **962,415** to the nearest hundred thousand.

1,000,000

11. unding to the nearest thousand, the dance at a baseball game was 52,000. Write the greatest and least numbers the actual attendance could have been.

Greatest: 52,499

Least: 51,500

12. Marco says that 64,951 rounded to the nearest thousand is 64,000. Is he correct? Explain.

No; Since the hundreds digit is a 9, he should round up to 65,000.

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Estimate each sum or difference by rounding to the place indicated.

13. 27,621 + 8,385
(*round to the nearest thousand*)

28,000 + 8,000 = 36,000

14. 9,326 − 4,758
(round to the nearest hundred)

9,300 − 4,800 = 4,500

15. 39,488 + 16,702
(*round to the nearest ten thousand*)

40,000 + 20,000 = 60,000

16. 732,416 − 318,050
(*round to the nearest h... thou...*)

700,000 − 300,000 = ...

Estimate each product by rounding to the greatest place. Estim... each ...g compatible numbers.

17. 627 × 83

600 x 80 = 48,000

18. 7,264 ×

7,000 = 42,000

19. 5,437 ÷ 6

5,400 ÷ 6 = 900

20. ... 79

1,6... = 20

21. A farm picked 2,486 apple... on M... Tuesday, and 3,108 on Wednesday. Estimate to the nearest ... ed how m... were picked in all.

2500 + 17... + 31... = 7,800 apples

22. A school o... boxes ... Each box holds 215 pencils. About how many pencils ... he s... l order?

3... 200 ... pencils

23. A lib... n puts ... books on shelves that hold 7 books each. Gia says the librarian nee... bout 50 sh...lves. Use compatible numbers to decide whether her estimate is ...able.

3500 ÷ 7 = 500

The librarian needs 500 shelves, not 50.

24. A pilot flew 3,147 miles on Monday and 1,965 miles on Tuesday. Estimate to the nearest hundred how many more miles the pilot flew on Monday.

3100 − 2000 = 1,100 more miles

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Name: _____ **Math 5**

Date: _____ **Per:** _____ **Unit 1:** Place Value & Whole Numbers

Quiz 1-1: Place Value, Powers of 10 & Rounding

1. Use the number **64,305,271**. What is the value of the 4?

2. Use the number **27,918,503**. What digit is in the hundred thousands place?

3. Write in standard form: *nine million, forty thousand, three h ed tw*

4. Write **507,016** in word form.

Word Form:

Five hundred seven thou d, s

5. Write **3,080,450** in expanded form

Expanded Form:

3,000,000 + 80 + 4 0 + 50

6. In **8,800**, the value of the f ow ma mes the value of the second 8

7. Write **10 ×** ponential form.

d th ue of **10^6**.

9. Find t oduct: **73×10^3**

10. Find the quotient: **$4{,}900{,}000 \div 10^4$**

1. 4,0 0,00
2. _____
3. 02

6. 10
7. 10^5
8. 1,000,000
9. 73,000
10. 490

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11. Write in standard form: $(5 \times 10^5) + (3 \times 10^3) + (8 \times 10^1)$

500000 + 3000 + 80

12. Find the product: **60 × 8,000**

13. Find the quotient: **36,000 ÷ 900**

14. Round **4,628,519** to the nearest ten thousand.

15. Round **852,377** to the nearest hundred thousand

16. Estimate by rounding to the nearest thousand
46,718 + 23,385

47,000 + 23,000

17. Estimate the product by rounding each factor to its greatest place: **618 × 29**

30

18. Estimate the quotient using compatible numbers: **3,148 ÷ 8**

3200 ÷ 8

Compare the values by filling in the circle with a <, >, or = symbol:

2,509,341 (<) **2,590,314**

20. A town has **48,316** people. A nearby city has **103,882** people. Round both numbers to the nearest ten thousand. About how many more people live in the city?

100,000 - 50,000 = 50,000 people

11.	503,080
12.	480,000
13.	40
14.	
	9
16.	
	18,000
	400
	<
19.	
20.	50,000 people

PREVIEW

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
VOCABULARY	The numbers being multiplied are called factors The answer to a multiplication problem is called the
AREA Model	**Break apart each factor by place value.** **Multiply to find each partial product. Then add the partial products.**

EXAMPLE 1 **243 × 36**

	200		3
30	6000	120	0
6	1200	240	18

7[illegible] + [illegible] + 108 = 8,748

EXAMPLE 2 **1,526 ×**

	500	20	6
[illegible]	[illegible]0000	[illegible]000	600	180
[illegible]	4000	2000	80	24

3[illegible] + 17000 + 680 + 204 = 51,884

STAND[illegible] [illegible]thm	**Step 1:** Multiply the top number by the Ones digit on the bottom. **Step 2:** Start a new row. Write a zero in the ones place to save its spot. Then multiply the top number by the tens digit. **Step 3:** add the two rows (partial products) to get the answer.

EXAMPLE 3

$$\begin{array}{r} 415 \\ \times\ 23 \\ \hline 1245 \\ +\ 8300 \\ \hline 9,545 \end{array}$$

9,545

EXAMPLE 4

$$\begin{array}{r} 507 \\ \times\ 64 \\ \hline 2028 \\ +30420 \\ \hline 32,448 \end{array}$$

32,448

PREVIEW

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YOU TRY!

Find each product using the standard algorithm.

1. 527 × 18

$$\begin{array}{r} 527 \\ \times\ 18 \\ \hline 4216 \\ +5270 \\ \hline 9,486 \end{array}$$

9,486

2. 364 × 45

$$\begin{array}{r} 364 \\ \times\ 45 \\ \hline 1820 \\ +14560 \\ \hline 16,380 \end{array}$$

3. 709 × 48

$$\begin{array}{r} 709 \\ \times\ 48 \\ \hline 5672 \\ +28360 \\ \hline 34,032 \end{array}$$

4. 648 × 52

33,696

5. 1,204 × 13

15,652

6. 4068 × 29

$$\begin{array}{r} 4068 \\ \times\ 29 \\ \hline 36612 \\ +81360 \\ \hline 117,972 \end{array}$$

117,972

APPLICATIONS

7. A theater has 38 rows with 26 seats in each row. How many seats are in the theater?

$$\begin{array}{r} 38 \\ \times\ 26 \\ \hline 228 \\ +760 \\ \hline 988 \end{array}$$

988 seats

8. A school ordered 145 boxes of pencils. Each box has 24 pencils. How many pencils did the school order?

$$\begin{array}{r} 145 \\ \times\ 24 \\ \hline 580 \\ +2900 \\ \hline 3480 \end{array}$$

3,480 pencils

9. Use estimation to check your answer to #6. Is your answer reasonable?

4,068 → 4,000

29 → 30

4000 × 30 = 120,000

Yes! 117,972 is close to 120,000.

PREVIEW

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WHY DID THE ROBOT *go on vacation?*

Directions: Find each product. Show all work on a separate sheet of paper. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

SET 1

G.	126 × 28	3,528	6.	225 × 97	21,8
O.	638 × 23	14,674	1.	529 × 18	9,2
C.	616 × 46	28,336	17.	252 × 14	3,52
I.	207 × 46	9,522	16.	871 × 51	44,421
R.	663 × 67	44,421	13.	506 × [illegible]	28,336
D.	485 × 45	21,825	10.	[illegible] × 58	14,674

SET 2

E.	266 × 95	25,270	14.	[illegible]	45,227
N.	561 × 12	6,732	5.	528 × [illegible]	6,864
H.	923 × 49	45,227		105 × [illegible]	7,665
E.	219 × 35	7,665		837 × 86	71,982
D.	774 × 93	71,982	12.	665 × 38	25,270
E.	429 × 16	6,864	3.	396 × 17	6,732

SET 3

T.	3306 × [illegible]	42,978	15.	1474 × 42	61,908
A.	924 × 67	61,908	4.	7584 × 26	197,184
[illegible]	[illegible]	197,184	7.	119 × 64	7,616
[illegible]	448 [illegible]	7,616	2.	741 × 58	42,978
R.	[illegible] × 13	21,437	9.	1776 × 38	67,488
T.	91[illegible]	67,488	11.	221 × 97	21,437

PREVIEW

ANSWER:

1.	2.		3.	4.	5.	6.	7.	8.		9.	10.		11.	12.	13.	14.	15.	16.	17.	18.	
I	T		N	E	E	D	E	D		T	O		R	E	C	H	A	R	G	E	!

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 5:** Multi-Digit Multiplication

**** This is a 2-page document! ****

Use the area model to find the product.

1. 253 × 17

	200	50	3
10	2000	500	30
7	1400	350	21

3400 + 850 + 51 = 43

2. 2,486 × 39

	2000	400	80	
30	60000	12000		80
9	18000	3600		

78000 + 15600 + 3120 + 96,954

Use the standard algorithm to find the product.

3. 72 × 48

72
× 48
576
+2880
3456

4. 638 × 27

638
× 27
4466
+12760
17226

17,226

5. 936 × 57

53,352

6. 408 × 35

408
× 35
2040
+12240
14280

14,280

7. 375 × 86

375
× 86
2250
+30000
32250

32,250

8. 819 × 26

819
× 26
4914
+16380
21294

21,294

PREVIEW

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9. 562 × 47

$$\begin{array}{r} 562 \\ \times\ 47 \\ \hline 3934 \\ +22480 \\ \hline 26414 \end{array}$$

26,414

10. 3,052 × 67

$$\begin{array}{r} 3052 \\ \times\ 67 \\ \hline 21364 \\ +183120 \\ \hline 204484 \end{array}$$

11. A shoe store sold 238 pairs of sneakers for $65 each. How much money did the store make?

$$\begin{array}{r} 238 \\ \times\ 65 \\ \hline 1190 \\ +14280 \\ \hline 15470 \end{array}$$

$15,470

12. A bakery makes 4[illegible] bagels each day. How many bagels do[illegible] 28 days?

$$\begin{array}{r} 450 \\ \times\ 28 \\ \hline 3[illegible]0 \\ +90[illegible] \\ \hline 260[illegible] \end{array}$$

12,600 bagels

13. A plane flies 545 miles per hour. How far does it fly in 12 hours? Use est[illegible] check that your answer is r[illegible]sona[illegible]

$$\begin{array}{r} 545 \\ \times\ 12 \\ \hline 1090 \\ +5450 \\ \hline 6540 \end{array}$$

6,540 m[illegible]

5 → 500

2 → 2

[illegible] × 12 = [illegible]00

Ye[illegible] is close[illegible] 6,000.

14. A farm[illegible] plants 42 rows of corn with 36 plants in each row. He wants at least 1,300 plants. Did he plant enough? Explain.

$$\begin{array}{r} 42 \\ \times\ 36 \\ \hline 252 \\ +1260 \\ \hline 1512 \end{array}$$

Yes, he will plant 1,512 plants, which is more than 1,300.

15. Marissa [illegible] 283 × 46 below. Find her mistake and the correct product.

$$\begin{array}{r} 283 \\ \times\ 46 \\ \hline 1698 \\ +1132 \\ \hline 2830 \end{array}$$

← missing the zero

$$\begin{array}{r} 283 \\ \times\ 46 \\ \hline 1698 \\ +11320 \\ \hline 13018 \end{array}$$

13,018

PREVIEW

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

VOCABULARY

Dividend : the number being divided
Divisor : the number you divide by
Quotient : the answer
Remainder : the amount left over

Division can [illegible]itten [illegible]many w[illegible]

63[illegible]
632 [illegible] 4)[illegible]

METHOD 1:
Partial Quotients

If you are left with zero, there is **no remainder.**

If you are left with a number smaller than the divisor, **that is the remainder.**

The steps below outline using parti[illegible]otients to [illegible] by 4.

1	Think in 100s. How many times ca[illegible] 4 go into 632? 100 × 4 = 400. Sub[illegible]
2	Think in 10s. How many ti[illegible]an 4 go into 232? 50 × 4 = [illegible]tract.
3	Repeat until you [illegible]t subtrac[illegible] = 32
4	Add up the partial [illegible]ents: 100 + 50[illegible] 158.

4) 632	
− 400	100
232	
− 200	50
32	
− 32	+ 8
0	158

100 + 50 + 8 = 158
632 ÷ 4 = 158

EXAMPLES

If you are left with zero, th[illegible] **no rema[illegible]**

If [illegible] left with a num[illegible]ller than the di[illegible]or, **that is the remainder.**

Use p[illegible]l qu[illegible] [illegible]ach quotient.

1. [illegible] 4

[illegible]	
− 4[illegible]	10
8	
− 8	2
0	

200 + 10 + 2 = 212

2. 738 ÷ 6

6) 738	
− 600	100
138	
− 120	20
18	
− 18	3
0	

100 + 20 + 3 = 123

3. 917 ÷ 5

5) 917	
− 500	100
417	
− 400	80
17	
− 15	3
2	

100 + 80 + 3 = 183 R2

4. 653 ÷ 3

3) 653	
− 600	200
53	
− 30	10
23	
− 21	7
2	

200 + 10 + 7 = 217 R2

PREVIEW

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METHOD 2:
Long Division

Repeat these steps until there are no digits left.

❶ DIVIDE	❷ MULTIPLY	❸ SUBTRACT	❹ BRING DOWN
How many times does the divisor fit? Write it on top.	Multiply the top number by the divisor. Write it below.	Subtract. The answer must be smaller than the divisor.	Bring the next digit down. Then start again at step 1.

EXAMPLES

If you are left with zero, there is **no remainder.**

If you are left with a number smaller than the divisor, **that is the remainder.**

Use long division to find each quotient.

5. $756 \div 3$

$$3\overline{)756}$$
$$-6$$
$$15$$
$$-15$$
$$06$$
$$-6$$
$$0$$

252

6. $4{,}386 \div 6$

$$6\overline{)438}$$
$$-42$$
$$06$$
$$-6$$
$$0$$

731

7. $955 \div 7$

$$7\overline{)955}$$
$$-7$$
$$25$$
$$-21$$
$$4$$

R3

8. $\div 8$

$$8\overline{)13}$$
$$-32$$
$$21$$
$$-16$$
$$53$$
$$-48$$
$$5$$

426 R5

$35 \div$

$$35$$
$$-1$$
$$0$$
$$35$$
$$-35$$
$$0$$

1207

10. $2{,}519 \div 4$

$$4\overline{)2519}$$
$$-24$$
$$11$$
$$-8$$
$$39$$
$$-36$$
$$3$$

629 R3

CATIONS

11. A baker made 1,350 cookies. She packs them into boxes of 6. How many boxes can she fill?

$$6\overline{)1350}$$
$$-12$$
$$15$$
$$-12$$
$$30$$
$$-30$$
$$0$$

225 boxes

12. A 4-day bike race covers 1,128 miles. If riders travel the same distance each day, how many miles do they ride each day?

$$4\overline{)1128}$$
$$-8$$
$$32$$
$$-32$$
$$08$$
$$-8$$
$$0$$

282 miles

PREVIEW

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 6:** Division with 1-Digit Divisors

**** This is a 2-page document! ****

Find each quotient using partial quotients or long division. Show all work.

1. 984 ÷ 4

```
    2 4 6
4 ) 9 8 4
   -8
    18
   -16
     24
    -24
      0
```

$\boxed{246}$

2. 915 ÷ 3

```
    3 0 5
3 ) 9 1 5
   -9
    0 1
    -0
     1[illegible]
      [illegible]
      0
```

$\boxed{305}$

3. 2,471 ÷ 7

```
    3 5 3
7 ) 2 4 7 1
   -21
     3 7
    -35
      2 1
     -21
       0
```

$\boxed{353}$

4. [illegible]4 ÷ 8

```
    4 [illegible]
3 2 7 [illegible]
  2
  [illegible]
    [illegible]
    [illegible]74
   -72
     2
```

$\boxed{409\ R2}$

5. 5,208 ÷ 4

```
    1 3 0 2
4 ) 5 2 0 8
   -4
    [illegible]
    [illegible]
      [illegible]
      [illegible]
      -8
       0
```

$\boxed{1302}$

6. 4,636 ÷ 5

```
    9 2 7
5 ) 4 6 3 6
   -45
     1 3
    -10
      3 6
     -35
       1
```

$\boxed{927\ R1}$

7. [illegible]

```
    1 1 6 9
    7 0 1 9
    [illegible]
     1 0
    -6
      4 1
     -36
       5 9
      -54
        5
```

$\boxed{1169\ R5}$

8. 8,406 ÷ 9

```
    9 3 4
9 ) 8 4 0 6
   -81
     3 0
    -27
      3 6
     -36
       0
```

$\boxed{934}$

PREVIEW

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9. 1,946 ÷ 2

```
      9 7 3
2 ) 1 9 4 6
    - 1 8
      1 4
    - 1 4
        0 6
        - 6
          0
```

$\boxed{973}$

10. 6,388 ÷ 7

```
      9 1 2
7 ) 6 3 8 8
    - 6 3
      0 8
      - 7
        1 8
      - 1 4
          4
```

$\boxed{912 \text{ R}4}$

11. A school has 1,575 books to put on 5 shelves equally. How many books go on each shelf?

```
      3 1 5
5 ) 1 5 7 5
    - 1 5
      0 7
      - 5
        2 5
      - 2 5
          0
```

$\boxed{3\ \ \text{ooks}}$

12. [illegible]armer[illegible]352 eg[illegible]e packs 8 eggs [illegible]each co[illegible]. H[illegible]many containers [illegible]he fill?

```
      2 9 4
      3 5 2
      [illegible]
      - 7 2
        3 2
      - 3 2
          0
```

$\boxed{294 \text{ Containers}}$

13. Find [illegible]otient [illegible]3 705 ÷ 6. Then identify [illegible]ivi[illegible]quotient, and rema[illegible]

```
      6 1 7
6 ) 3 [illegible] 5
    - [illegible]
      [illegible] 0
      - 6
        [illegible] 5
      - 4 2
          3
```

$\boxed{617 \text{ R}3}$

Dividend = 3705
Divisor = 6
Quotient = 617
Remainder = 3

14. Dylan says 4,824 ÷ 8 = 63. Use long division to find his mistake. Then find the correct quotient.

```
      6 0 3
8 ) 4 8 2 4
    - 4 8
      0 2
      - 0
        2 4
      - 2 4
          0
```

He is missing the zero in the quotient. It should be 603.

PREVIEW

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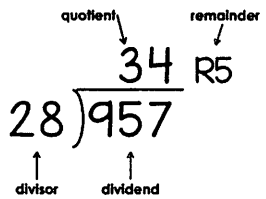
Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

DIVIDING BY
2-Digit Divisors

VOCABULARY REMINDER:



Dividend: the number being divided

Divisor: the number you divide by

Quotient: the answer

Remainder: what's left over

Follow the steps and examples below to divide by 2-digit divisors

1	**Look:** Underline the first digits the divisor fits into.
2	**Divide:** Round the divisor to estimate how many times it fits. Write that number on top. (*For example, 31 rounds to 30. How many times does 30 go into ...*)
3	**Multiply:** Multiply that number by the divisor and write the answer underneath.
4	**Subtract:** Draw a line and subtract.
5	**Bring Down:** Bring down the next digit.
6	**Repeat:** Go back to Step 2 if there are digits left to bring down. Whatever is left at the end is the remainder.

Example 1 (no remainder):

$$\begin{array}{r} 24 \\ 31\overline{)744} \\ -62 \\ \hline 124 \\ -124 \\ \hline 0 \end{array}$$

31 × 1 = 31
31 × 2 = 62
31 × 3 = 93
31 × 4 = 124

Example 2 (with a remainder):

$$\begin{array}{r} 34\ \text{R5} \\ 28\overline{)957} \\ -84 \\ \hline 117 \\ -112 \\ \hline 5 \end{array}$$

28 × 1 = 28
28 × 2 = 56
28 × 3 = 84
28 × 4 = 112

ADJUSTING
Estimates

- If the product is greater than the number you are dividing, your estimate is too big. **Try a smaller digit.**
- If the remainder is greater than or equal to the divisor, your estimate is too small. **Try a larger digit.**

TRY!

Find the quotient.

1. 896 ÷ 16

$$\begin{array}{r} 56 \\ 16\overline{)896} \\ -80 \\ \hline 96 \\ -96 \\ \hline 0 \end{array}$$

56

2. 4,757 ÷ 67

$$\begin{array}{r} 71 \\ 67\overline{)4757} \\ -469 \\ \hline 67 \\ -67 \\ \hline 0 \end{array}$$

71

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3. 828 ÷ 36

$$\begin{array}{r} 23 \\ 36\overline{)828} \\ -72 \\ \hline 108 \\ -108 \\ \hline 0 \end{array}$$

23

4. 5,000 ÷ 38

$$\begin{array}{r} 131 \\ 38\overline{)5000} \\ -38 \\ \hline 120 \\ -114 \\ \hline 60 \\ \vdots \end{array}$$

R22

5. 3,456 ÷ 32

$$\begin{array}{r} 108 \\ 32\overline{)3456} \\ -32 \\ \hline 25 \\ -0 \\ \hline 256 \\ \vdots \end{array}$$

108

÷ 54

$$\begin{array}{r} 36 \\ \vdots 385 \\ 54 \\ \hline 198 \\ -162 \\ \hline 365 \\ -324 \\ \hline 41 \end{array}$$

136 R41

APPLICATIONS

7. A school is taking 1,230 students on a field trip. Each bus holds 58 people. How many buses will be completely filled?

$$\begin{array}{r} 21 \\ 58\overline{)1230} \\ -116 \\ \hline 70 \\ -58 \\ \hline 12 \end{array}$$

21 R12 → 21 buses will be full

8. A factory packs 6,912 crayons into boxes of 48. How many boxes does it fill?

$$\begin{array}{r} 144 \\ 48\overline{)6912} \\ -48 \\ \hline 211 \\ -192 \\ \hline 192 \\ -192 \\ \hline 0 \end{array}$$

144 boxes

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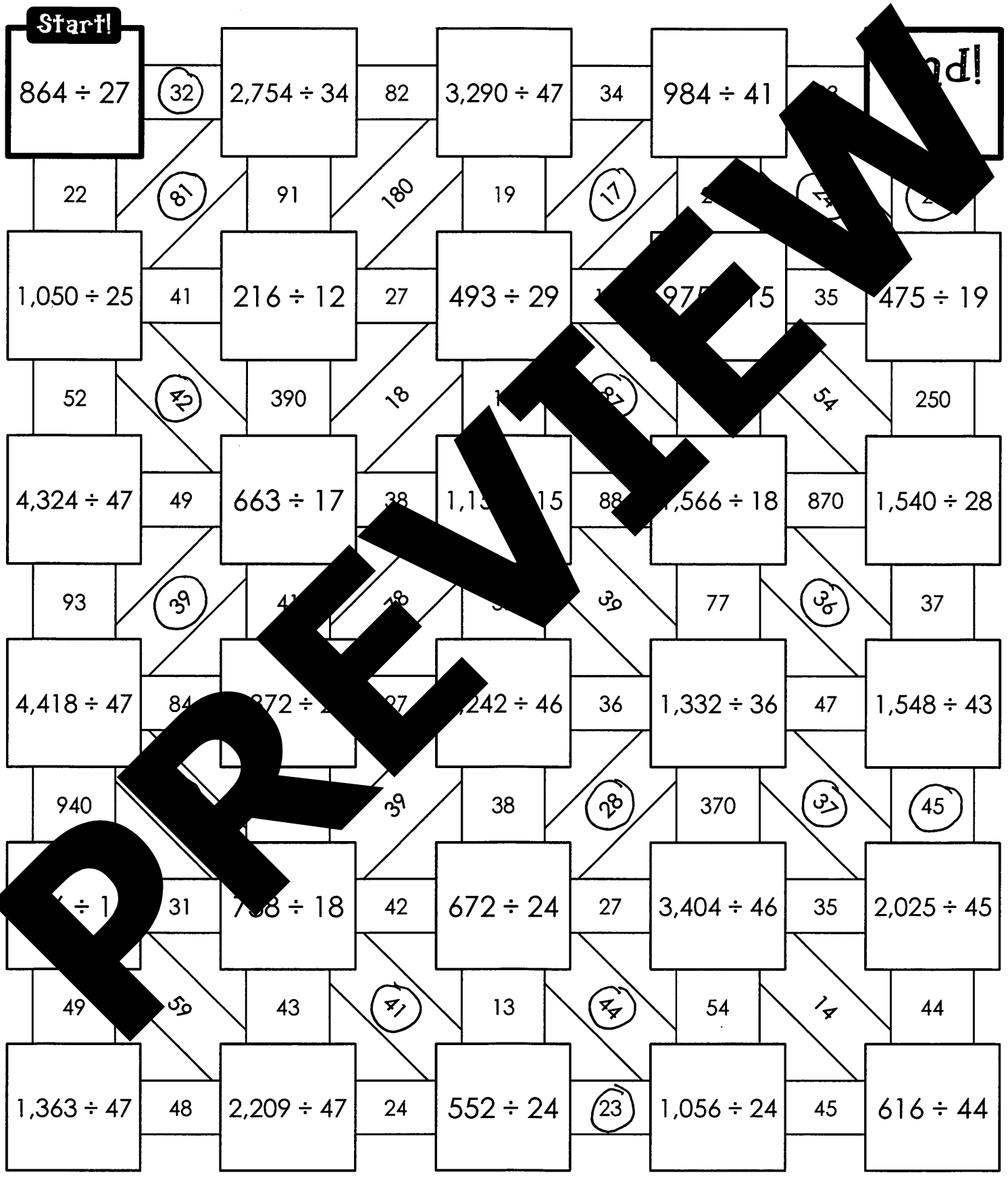
2-DIGIT DIVISORS Maze!

Directions: Find each quotient. Use your solutions to navigate through the maze.
Shade your path from Start to End as you go! SHOW ALL WORK on a separate sheet and attach it!



PREVIEW

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 7:** Division with 2-Digit Divisors

**** This is a 2-page document! ****

Find each quotient. Show all work.

1. $672 \div 21$

$$\begin{array}{r} 32 \\ 21\overline{)672} \\ -63 \\ \hline 42 \\ -42 \\ \hline 0 \end{array}$$

32

2. $918 \div 34$

$$\begin{array}{r} 27 \\ 34\overline{)918} \\ -68 \\ \hline 238 \\ -238 \\ \hline \end{array}$$

27

3. $853 \div 27$

$$\begin{array}{r} 31 \\ 27\overline{)853} \\ -81 \\ \hline 43 \\ -27 \\ \hline 16 \end{array}$$

31 R16

4. [illegible] $\div 62$

[illegible]

63

5. $5{,}513 \div 37$

[illegible]

149

6. $8{,}016 \div 24$

$$\begin{array}{r} 334 \\ 24\overline{)8016} \\ -72 \\ \hline 81 \\ -72 \\ \hline 96 \\ -96 \\ \hline 0 \end{array}$$

334

[illegible]

$$\begin{array}{r} 203 \\ 43\overline{)8765} \\ -86 \\ \hline 16 \\ -0 \\ \hline 165 \\ -129 \\ \hline 36 \end{array}$$

203 R36

8. $7{,}392 \div 56$

$$\begin{array}{r} 132 \\ 56\overline{)7392} \\ -56 \\ \hline 179 \\ -168 \\ \hline 112 \\ -112 \\ \hline 0 \end{array}$$

132

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9. 6,045 ÷ 52

```
      116
52 ) 6045
    -52
      84
     -52
      325
     -312
       13
```

$\boxed{116 \text{ R } 13}$

10. 9,361 ÷ 73

```
      128
73 ) 9361
    -73
     206
    -146
      601
     -584
       17
```

$\boxed{128 \text{ R} 17}$

11. A concert hall collected $9,450 in ticket sales. Each ticket cost $35. How many tickets were sold?

```
      270
35 ) 9450
    -70
     245
    -245
       00
      -0
```

$\boxed{\text{[illegible] tic[illegible]}}$

12. [illegible]brary [illegible] 50 boo[illegible] each shelf holds [illegible] books. H[illegible] [illegible]ves are needed [illegible]ld all of t[illegible]s?

```
      2[illegible]
[illegible]50
[illegible]8
     470
    -448
      22
```

$\boxed{28 \text{ shelves}}$

27 R22 → 27 shelves will not be enough, so they need 28.

13. Ms. R[illegible] class [illegible]ted 1,976 cans in 26 days. Th[illegible] [illegible]e number [illegible] day[illegible] [illegible]any cans did they [illegible]each[illegible]

```
[illegible]6 ) 19[illegible]6
    -182
      156
     -156
        0
```

$\boxed{76 \text{ cans}}$

14. Without dividing, explain how you know the quotient of 4,320 ÷ 72 will be less than 100.

72 × 100 = 7,200

Since 4,320 is less than 7,200 then we know the quotient must be less than 100.

PREVIEW

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
REMAINDERS	When you divide in a word problem, **you must decide w[illegible]e remainder means.** Read the question carefully! [illegible] are [illegible] common ways to interpret a remai[illegible]
DROP the Remainder ***Look for:*** *How many full...? How many can be made/bought?*	**Use only the** quotient. The remainder is not enough to mak[illegible]er full [illegible]p.
	Example 1 Ms. Lee has 230 stickers. She [illegible]ts 12 [illegible]h page of a book. How many page[illegible] she fill co[illegible]
	$\begin{array}{r} 19 \\ 12\overline{)230} \\ -12 \\ \hline 110 \\ -108 \\ \hline 2 \end{array}$ **[illegible]otie[illegible]** 1 **Remainder:** 2 **[illegible]es the re[illegible]der mean?** 1 [illegible]are full and 2 S[illegible]ers are left 19 pages
ROUND UP the Quotient ***Look for:*** *How many are needed so [illegible] everyone/every[illegible]*	1 **[illegible]he quotient.** [illegible]extra [illegible]p is needed for the remainder.
	Exa[illegible]e 2 348 s[illegible]oing on a field trip. Each bus holds 45 students. [illegible]any buses are needed?
	$\begin{array}{r} 7 \\ \overline{)34[illegible]} \\ 3[illegible] \\ \hline [illegible]33 \end{array}$ **Quotient:** 7 **Remainder:** 33 **What does the remainder mean?** 33 students are left after 7 buses are filled **Answer:** 8 buses
[illegible]NDER Answer ***Look for:*** *How many are left? How many extra?*	**The answer is the** remainder**, or the amount left over.**
	Example 3 A florist has 175 roses. She makes bouquets of 8 roses each. How many roses will be left over?
	$\begin{array}{r} 21 \\ 8\overline{)175} \\ -16 \\ \hline 15 \\ -8 \\ \hline 7 \end{array}$ **Quotient:** 21 **Remainder:** 7 **What does the remainder mean?** There are 7 left over roses. **Answer:** 7

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YOU TRY!

Solve. Check how to interpret the remainder and give your answer.

4. A factory packs 1,000 markers into boxes of 24. How many boxes can be completely filled?

$$\begin{array}{r} 41 \\ 24\overline{)1000} \\ -96 \\ \hline 40 \\ -24 \\ \hline 16 \end{array}$$

41 R16

☑ Drop ☐ Round Up ☐ Remainder

Answer: 41 boxes

5. A ribbon is 500 inches long. Each bow uses 18 inches. How many inches of ribbon will be left over?

$$\begin{array}{r} 27 \\ 18\overline{)500} \\ -36 \\ \hline 140 \\ -126 \\ \hline 14 \end{array}$$

27 R14

☐ Drop ☐ Round Up ☑ Remainder

Answer: 14 inches

6. There are 27 students in a class. Each table seats 4 students. How many tables are needed so every student has a seat?

$$\begin{array}{r} 6 \\ 4\overline{)27} \\ -24 \\ \hline 3 \end{array}$$

☐ Drop ☐ Round Up ☐ Remainder

Answer: 7 tables

7. [illegible] Movie tickets cost [illegible]. How many tickets can [illegible] buy?

$$\begin{array}{r} 9 \\ 9\overline{)86} \\ -81 \\ \hline 5 \end{array}$$

9 R5

☑ Drop ☐ Round Up ☐ Remainder

Answer: 9 tickets

8. [illegible] has 1,145 photos. Each [illegible] holds 36 photos. How many albums does he need to hold all of his photos?

$$\begin{array}{r} 31 \\ 36\overline{)1145} \\ -108 \\ \hline 65 \\ -36 \\ \hline 29 \end{array}$$

31 R29

☐ Drop ☑ Round Up ☐ Remainder

Answer: 32 albums

9. A baker has 250 cookies. She puts 12 cookies in each box. How many cookies will be left over?

$$\begin{array}{r} 20 \\ 12\overline{)250} \\ -24 \\ \hline 10 \\ -0 \\ \hline 10 \end{array}$$

☐ Drop ☐ Round Up ☑ Remainder

Answer: 10 cookies

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 8:** Interpreting Remainders

**** This is a 2-page document! ****

Solve each problem. Interpret the remainder and give the answer.

1. A baker has 275 muffins. She puts 12 muffins in each box. How many boxes can she fill?

```
      22
12 ) 275
    -24
      35
     -24
      11
```

22R11 → $\boxed{\text{22 boxes}}$

2. A group of 93 people is going on [illegible]. Each van holds 8 people. [illegible] ma[illegible]ns are needed?

```
      11
8 ) 93
    -8
      [illegible]
      5
```

[illegible] R[illegible] $\boxed{\text{12 [illegible]s}}$

3. Mr. Kim has 415 pencils to share equally among 25 students. How many pencils w[illegible] be left over?

```
      16
25 ) 415
    -25
      165
     -150
       15
```

16 R[illegible] → $\boxed{\text{[illegible]5 pen[illegible]}}$

4. A sch[illegible] to ship 1,250 books. Each carton [illegible] books. How many cartons are nee[illegible]?

```
      39
32 ) 1250
    -96
      290
     -288
        2
```

39 R2 → $\boxed{\text{40 cartons}}$

5. [illegible] $15[illegible] end on video games. [illegible]ne c[illegible]5. How many games can [illegible]y?

```
      4
[illegible]5 ) 150
    -140
       10
```

4R10 → $\boxed{\text{4 games}}$

6. A farmer has 2,150 eggs. Each carton holds 12 eggs. He sells only full cartons. How many cartons can he sell?

```
      179
12 ) 2150
    -12
      95
     -84
      110
     -108
        2
```

179R2 → $\boxed{\text{179 cartons}}$

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7. There are 538 people at a banquet. Each table seats 10 people. How many tables are needed?

$$\begin{array}{r} 53 \\ 10\overline{)538} \\ -50 \\ \hline 38 \\ -30 \\ \hline 8 \end{array}$$

53 R 8 → 54 tables

8. A pet store has 365 fish. It puts 15 fish in each tank. How many fish are in the tank that is not full?

$$\begin{array}{r} 24 \\ 15\overline{)365} \\ -30 \\ \hline 65 \\ -60 \\ \hline 5 \end{array}$$

24 R5 → [illegible]sh

9. Write a word problem for 75 ÷ 6 where the answer is **12**.

There are 75 people traveli[illegible] to a concert. If each vehicle [illegible] people, how many vehicl[illegible] are needed?

Solution:

$$\begin{array}{r} 12 \\ 6\overline{)75} \\ -6 \\ \hline 15 \\ -12 \\ \hline 3 \end{array}$$

12 R3 → 13 vehicles

10. Write a word problem [illegible] ÷ 6 where the [illegible] is **12**.

Josh has 75 p[illegible] candy to split among [illegible]le. [illegible]ny pieces will e[illegible] pe[illegible]n get

Solution:

$$\begin{array}{r} 12 \\ 6\overline{)75} \\ -6 \\ \hline 15 \\ -12 \\ \hline 3 \end{array}$$

12 R3 → 12 pieces

Write [illegible]ord prob[illegible]em for 75 ÷ 6 where the answer is **3**.

[illegible]on has 75 baseball cards. If each [illegible]age of her book holds 6 cards, how many cards will be left over?

Solution:

$$\begin{array}{r} 12 \\ 6\overline{)75} \\ -6 \\ \hline 15 \\ -12 \\ \hline 3 \end{array}$$

12 R3 → 3 cards

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Name: _____

Date: _____ Per: _____

Math 5

Unit 1: Place Value & Whole Numbers

Quiz 1-2: Multiplication, Division & Remainders

1. Find the product: **1,308 × 24**

$$\begin{array}{r} 1308 \\ \times\ 24 \\ \hline 5232 \\ +26160 \\ \hline 31392 \end{array}$$

2. Find the product: **735 × 46**

$$\begin{array}{r} 735 \\ \times\ 46 \\ \hline 4410 \\ +29400 \\ \hline 33810 \end{array}$$

3. Find the product: **294 × 58**

$$\begin{array}{r} 294 \\ \times\ 58 \\ \hline 2352 \\ +14700 \\ \hline 17052 \end{array}$$

4. A restaurant [illegible] meals ea[illegible].
How ma[illegible] eals d[illegible]t serve in 3 [illegible]ays?

$$\begin{array}{r} \times\ 31 \\ \hline 168 \\ +3[illegible]40 \\ \hline 5208 \end{array}$$

5. [illegible] quotient: **4,152 ÷ 6**

$$\begin{array}{r} 692 \\ 6\overline{)4152} \\ -36 \\ \hline 55 \\ -54 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

1. 31[illegible]92
2. 33[illegible]
3. [illegible]
4. 5,208 [illegible]als
5. [illegible]92

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6. Find the quotient: **2,048 ÷ 32**

$$\begin{array}{r} 64 \\ 32\overline{)2048} \\ -192 \\ \hline 128 \\ -128 \\ \hline 0 \end{array}$$

7. Find the quotient: **6,415 ÷ 28**

$$\begin{array}{r} 229 \\ 28\overline{)6415} \\ -56 \\ \hline 81 \\ -56 \\ \hline 255 \\ -252 \\ \hline 3 \end{array}$$

6. 64

7. 229 R3

8. 14 va

9.

For questions 8-10: Solve each problem. Then chec ox that sh u did with the remainder: **Drop** it, **Round Up** the quotient, or use der as th r.

8. There are **196** students going to a museum n van ho tudents. How many vans are needed?

☐ Drop ☑ Round Up ☐ Remainder

$$\begin{array}{r} 13 \\ 15\overline{)196} \\ -15 \\ \hline 46 \\ -45 \\ \hline 1 \end{array}$$

13 vans

9. Ana has **500** b uses 2 each bracelet. How many beads will h fter she m s many bracelets as she can?

☐ Drop ☐ Round ☑ Remainder

$$\begin{array}{r} 500 \\ 18 \\ \hline 20 \\ -0 \\ \hline 20 \end{array}$$

20 R 20 → 20 beads

10. A has **3,029** crayons. It packs **7** crayons in each box. How many boxes can mpletely filled?

☑ Drop ☐ Round Up ☐ Remainder

$$\begin{array}{r} 432 \\ 7\overline{)3029} \\ -28 \\ \hline 22 \\ -21 \\ \hline 19 \\ -14 \\ \hline 5 \end{array}$$

432 R5 → 432 boxes

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
FACTORS	**Factors** are whole numbers **multiplied together** to get a product. Use a **T-chart** to list **factor pairs.** • Start with 1. • Stop when the factors start to repeat.
PRIME Numbers	• A **prime number** is a whole number greater than 1 that has **exactly 2 factors:** 1 and itself. • **Examples:** 2, 3, 5, 7, 11, 13, 17, 19, 23, ...
COMPOSITE Numbers	• A **composite number** is a whole number *greater than* 1 that has **more than two factors.** • **Examples:** 4, 6, 8, 9, 10, 12, 14, 15, ... • *The numbers 0 and 1 are neither prime nor composite.
EXAMPLES	**List the factors of each number. Is it *prime* or *composite*?**

2. Prime	4. 21 1, 3, 7, 21 Composite	3. 2 1, 2 Prime
1, 3, 5, 9, 15, 45 Composite	5. 31 1, 31 Prime	6. 24 1, 2, 3, 4, 6, 8, 12, 24 Composite

PRIME Number Hunt

Shade prime numbers.

Cross out composite numbers.

Circle if neither.

(1)	2	3	~~4~~	5	~~6~~	7	~~8~~	~~9~~	~~10~~
11	~~12~~	13	~~14~~	~~15~~	~~16~~	17	~~18~~	19	~~20~~
~~21~~	~~22~~	23	~~24~~	~~25~~	~~26~~	~~27~~	~~28~~	29	~~30~~
31	~~32~~	~~33~~	~~34~~	~~35~~	~~36~~	37	~~38~~	~~39~~	~~40~~
41	~~42~~	43	~~44~~	~~45~~	~~46~~	47	~~48~~	~~49~~	~~50~~

PREVIEW

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DIVISIBILITY
Rules

Knowing the divisibility rules can help you identify factors.

- **Divisible by 2:** The number is even (ends in 0, 2, 4, 6, or 8).
- **Divisible by 3:** The sum of the digits is divisible b
- **Divisible by 5:** The number ends in 0 or 5.
- **Divisible by 6:** The number is divisible by both
- **Divisible by 9:** The sum of the digits is divi
- **Divisible by 10:** The number ends in

EXAMPLES

Helpful Hint:
Use the divisibility rules first as a quick check. If no rule works, don't forget to check 7!

Tell whether each number is pr composite, If composite, write it as duct wo factor

7. 51 Composite ; 3 × 17	8. ne
9. 87 Composite ; × 29	**10.** 72 posite ; 9 × 8
11. 59 Pr e	**12.** 1 Neither
91 site ; 7 × 13	**14.** 125 Composite ; 5 × 25
15. 135 posite ; 5 × 27	**16.** 117 Composite ; 9 × 13
17. 102 Composite ; 2 × 51	**18.** 140 Composite ; 10 × 14

19. Explain why 2 is the only even prime number.

Two is prime because it is only divisible by 1 and itself, but all other even numbers are divisible by 2.

20. Kayla says 57 is prime because it is odd. Is she correct? Explain.

No; 57 = 3 × 19 which makes it a composite number

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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ Per: _____ **Homework 9:** Prime & Composite Numbers

**** This is a 2-page document! ****

List all the factors of each number. Then tell whether it is *prime* or *composite*.

1. 17
1, 17
Prime

2. 15
1, 3, 5, 15
Composite

3. 28
1, 2, 4, 7, 14, 28
Composite

4. 47
1, 47
Prime

5. 53
1, 53
Prime

6. 60
1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
Composite

7. 81
1, 3, 9, 27, 81
Composite

8. 61
1, 61
Prime

9. 39
1, 3, 13, 39
Composite

10. 99
1, 3, 9, 11, 33, 99
Composite

Tell whether each number is *prime*, *composite*, or *neither*. If composite, write it as a product of two factors.

11. 93
Composite; 3 × 31

12. 113
Prime

13. 133
Composite; 7 × 19

14. 63
Composite; 7 × 9

15. 89
Prime

16. 0
Neither

17. 119
Composite; 7 × 17

18. 83
Prime

19. 111
Composite; 3 × 37

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20. Circle all the prime numbers in the list below.

55 (67) (79) 85 (103) (107) 123 129

21. What is the greatest prime number less than 100?

$99 = 9 \times 11$

$98 = 2 \times 49$

97 is prime

22. What is the least three-digit prime number?

$100 = 2 \times 50$

101 is pr[illegible].

23. List all prime numbers between 100 and 110.

101, 103, 107, 109

100, 102, 104, 106, 108, 110 are even

$105 = 5 \times 21$

24. Write a[illegible] composite nu[illegible] that is grea[illegible]n 75 [illegible]ess than 80.

[illegible]7 =

25. Mr. Davis has 96 chairs. He wants to ar[illegible] them in [illegible]rows. Is 96 prime or composite? List two different ways he could arrange [illegible]chairs.

96 is composi[illegible]; [illegible]ows of 24 chairs

$96 = 4 \times 24$

$96 = 8 \times 12$ [illegible]ows of 12 chairs

Answers may vary

26. Nate says that th[illegible]f t[illegible]me numbers is always even. Give an example to show that he is wrong.

2 a[illegible] 3 a[illegible]pri[illegible] numbers.

[illegible]5; no[illegible]en

27. Is 85 pri[illegible]omposite? How do you know without finding all of its factors?

[illegible]is [illegible]posite; it ends in 5 so it [illegible]s divisible by 5.

28. [illegible]er has 109 cupcakes. Can she arrange them in equal rows with more than one row an[illegible]more than one cupcake in each row? Explain.

No; 109 is a prime number so its only factors are 1 and 109.

PREVIEW

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
PRIME Factorization	The **prime factorization** of a number is the nu[illegible] written as a product of prime nu[illegible] **For example,** the prime factorization [illegible] 2× [illegible] 3.
FACTOR Trees	**A factor tree is a diagram that helps y[illegible]nd the [illegible]ization.** Follow the steps below to use a factor [illegible] find the pr[illegible]ation.

❶ Start with the number at the to[illegible]

❷ Write any two factors (no[illegible]) on the [illegible]nches below it.

❸ If a factor is com[illegible]e, ke[illegible]g.

❹ Circle eac[illegible] prime f[illegible]

When every bran[illegible]ds in a pr[illegible]e done!

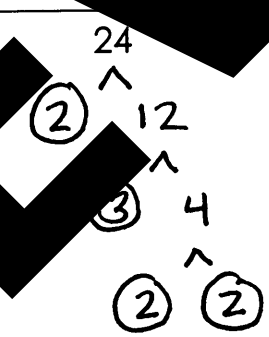
❺ Write th[illegible] circled pr[illegible] as a pro[illegible] from least to greatest.

❻ Ch[illegible]ck. [illegible] p[illegible] to get back to the original number.

EXAMPLES

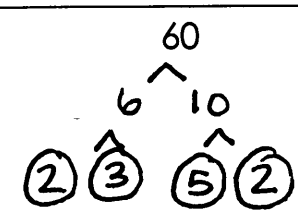
Side Note: [illegible] factors c[illegible] wi[illegible] wit[illegible]nents. 2 × 2[illegible] = 2^3 × [illegible]

1.



$2 \times 2 \times 2 \times 3 = 2^3 \times 3$

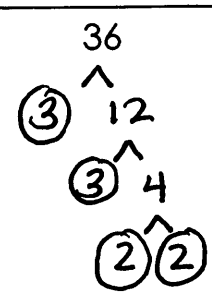
2.



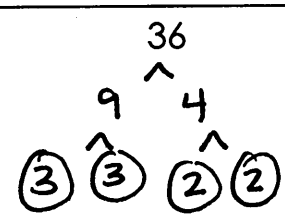
$2 \times 2 \times 3 \times 5 = 2^2 \times 3 \times 5$

D[illegible]ERENT Trees

Using 36 as an example, show how you can start with different factors but the prime factorization will be the same.



$2 \times 2 \times 3 \times 3 = 2^2 \times 3^2$



$2 \times 2 \times 3 \times 3 = 2^2 \times 3^2$

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PREVIEW

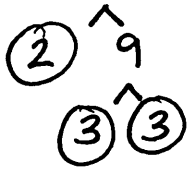
YOU TRY!

Use a factor tree to find the prime factorization of each number.

3. 18

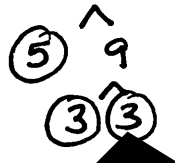
2 9

3 3



$2 \times 3 \times 3 = 2 \times 3^2$

4. 45



5 9

3 3

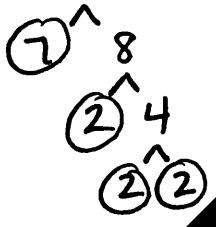
$3 \times 3 \times$ [illegible] $3^2 \times$ [illegible]

5. 56

7 8

2 4

2 2



$2 \times 2 \times 2 \times 7 = 2^3$ [illegible] 7

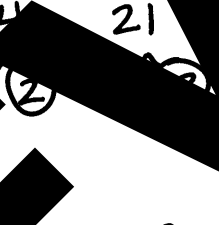


6. [illegible]

[illegible] 8 9

[illegible] 4 3 3

2 [illegible]



[illegible] $\times 2 \times 2 \times$ [illegible] $\times 3 = 2^3 \times 3^2$

7. 84

4 21

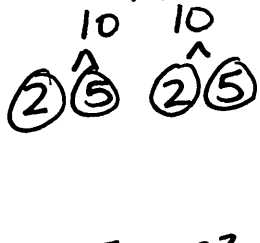
2 [illegible]

$2 \times$ [illegible] $\times 7 =$ [illegible] $^2 \times 3 \times 7$

100

10 10

2 5 2 5



$2 \times 2 \times 5 \times 5 = 2^2 \times 5^2$

TH[illegible]

A[illegible]

9. Wh[illegible] prime factor[illegible] $2 \times 3 \times 7$?

$2 \times 3 \times 7$

6×7

$\boxed{= 42}$

10. Ty says the prime factorization of 32 is 4 × 8. Is he correct? Explain.

No; 4 and 8 are not prime

$32 = 2 \times 2 \times 2 \times 2 \times 2 = 2^5$

11. What is the smallest number that has three different prime factors? Show its prime factorization.

$2 \times 3 \times 5$

$= 6 \times 5$

$\boxed{= 30}$

12. What is the prime factorization of 37? Explain how you know.

37 is prime so its prime factorization is just 37.

PREVIEW

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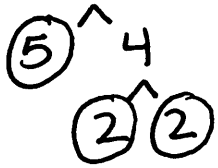
Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ Per: _____ **Homework 10:** Prime Factorization

**** This is a 2-page document! ****

Use a factor tree to find the prime factorization of each number.

1. 20



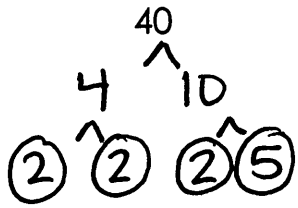
$2 \times 2 \times 5 = 2^2 \times 5$

2. 28



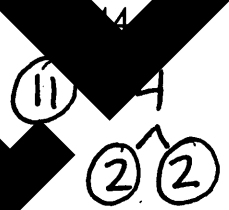
$2 \times 2 \times 7 = 2^2 \times 7$

3. 40



$2 \times 2 \times 2 \times 5 = 2^3 \times 5$

4.



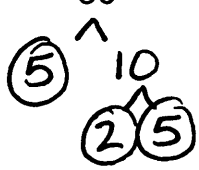
$2 \times 2 \times 11 = 2^2 \times 11$

5.



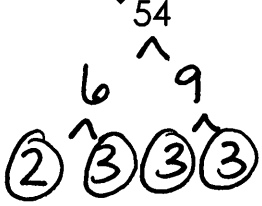
$2 \times 2 \times 2 \times 2 \times 3 = 2^4 \times 3$

6. 50



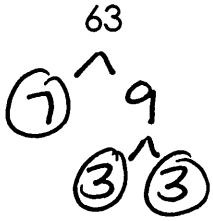
$2 \times 5 \times 5 = 2 \times 5^2$

7. 54



$2 \times 3 \times 3 \times 3 = 2 \times 3^3$

8. 63



$3 \times 3 \times 7 = 3^2 \times 7$

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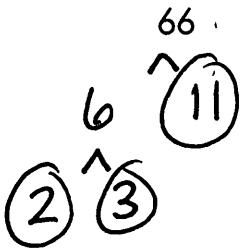
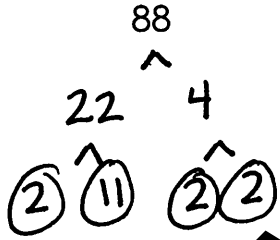
9.



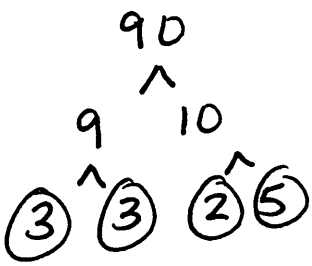
$2 \times 3 \times 11$

10.



$2 \times 2 \times 2 \times$

11. Show how two different factor trees for 90 will lead to the [illegible] prime fa[illegible]



$2 \times 3 \times 3 \times 5 = 2 \times 3^2 \times 5$



$\times 3 \times 3 \times 2$
$= 2 \times 3^2 \times 5$

12. What number has a prim[illegible]ctoriz[illegible] $2 \times 3 \times 5 \times 5$?

$2 \times 3 \times 5$
$= 6 \times 5 \times$
$=$ [illegible]

13. What number has a prime factorization of $\times 7 \times 7$?

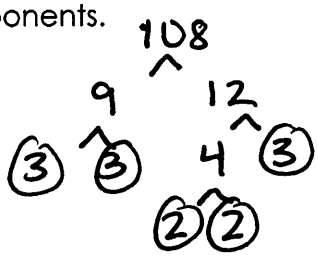
$2 \times 7 \times 7$
$= 14 \times 7$
$= 98$

14. M[illegible]ys the [illegible] factorization of 80 is $2 \times$ [illegible] 10. Is she correct? Explain.

[illegible] because 4 and 10 [illegible] not prime. It should be:

$2 \times 2 \times 2 \times 2 \times 5 = 2^4 \times 5$

15. Write the prime factorization of 108 using exponents.



$2 \times 2 \times 3 \times 3 \times 3 = 2^2 \times 3^3$

PREVIEW

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
MULTIPLES	• A **multiple** of a number is the product of that number and any counting number (1, 2, 3, ...). • For example, list the multiples of 4: 4, 8, 12, 16, ...
MULTIPLES vs Factors	**Using 4 × 6 = 24 as an example:** 4 is a factor of 24 and 24 is a multiple of 4!
EXAMPLES	**1.** List the first six multiples of 7. 7, 14, 21, 28, 35, 42
	2. Is 63 a multiple of 9? Explain. Yes; 7 × 9 = 63
	3. Is 6 a factor of 40? Explain. No; 6 × 6 = 36 and 6 × 7 = 42
LCM (Least Common Multiple)	A **common multiple** is a multiple that two or more numbers **share.** The **least common multiple (LCM)** is the **smallest** multiple they share. **For example, find the LCM of 4 and 6:** Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, ... Multiples of 6: 6, 12, 18, 24, 30, 36, ... The **LCM of 4 and 6** is 12.
EXAMPLES	**Find the LCM of each pair of numbers.**
	4. 3 and 5 3: 3, 6, 9, 12, 15, 18, 21, ... 5: 5, 10, 15, 20, 25, ... LCM = 15
	5. 6 and 10 6: 6, 12, 18, 24, 30, 36, ... 10: 10, 20, 30, 40, 50, ... LCM = 30
	6. 4 and 10 4: 4, 8, 12, 16, 20, 24, ... 10: 10, 20, 30, 40, 50, ... LCM = 20
	7. 9 and 12 9: 9, 18, 27, 36, 45, 54, ... 12: 12, 24, 36, 48, 60, ... LCM = 36

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GCF Greatest Common Factor	A **common factor** is a factor that two or more numbers **share.** The **greatest common factor (GCF)** is the **greatest** factor they share. **For example, find the GCF of 12 and 18:** **Factors of 12:** 1, 2, 3, 4, 6, 12 **Factors of 18:** 1, 2, 3, 6, 9, 18 **Common factors:** 1, 2, 3, 6 The **GCF of 12 and 1**[illegible] 6
EXAMPLES	**Find the GCF of each pair of num**[illegible]
	8. 16 and 24 16: 1, 2, 4, 8, 16 24: 1, 2, 3, 4, 6, [illegible] GCF [illegible]
	[illegible] 35 2[illegible] 2, [illegible] 10, 20 35: [illegible] 1, 35 GCF = 5
	10. 18 and 30 18: 1, [illegible] 9, [illegible] 30 [illegible] 2, 3, [illegible] 15, 30 GCF = 6
	[illegible] 28 and 42 28: 1, 2, 4, 7, 14, 28 42: 1, 2, 3, 6, 7, 14, 21, 42 GCF = 14
GCF or [illegible]	**GCF** [illegible] it t[illegible] items into [illegible] groups with nothing left over. [illegible] **words:** *greatest, most, largest*
	LCM Use it to find when things will happen at the same time again. **Key words:** *least, smallest, next, again*
[illegible]ORD [illegible]oblems	**12.** Ms. Lopez has 24 pencils and 36 erasers. She wants to make identical supply bags with no supplies left over. What is the greatest number of bags she can make? GCF: 24: 1, 2, 3, 4, 6, 8, 12, 24 36: 1, 2, 3, 4, 6, 9, 12, 18, 36 12 bags
	13. Hot dogs come in packs of 8. Buns come in packs of 6. What is the least number of hot dogs Jay can buy to have the same number of hot dogs and buns? LCM: 8: 8, 16, 24, 32, 40 6: 6, 12, 18, 24, 30 24 hot dogs

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FACTORS & MULTIPLES *Message Puzzle!*

Find the GCF of each pair of numbers.

1. 18 and 24 — 6
2. 32 and 48 — 16
3. 45 and 60 — 15
4. 21 and 49 — 7
5. 36 and 54 — 18

Find the LCM of each pair of numbers.

6. 3 and 8 — 24
7. 6 and 15 — 30
8. 4 and 14 — 28
9. 10 and 12 — 60
10. 8 and 10 — 40

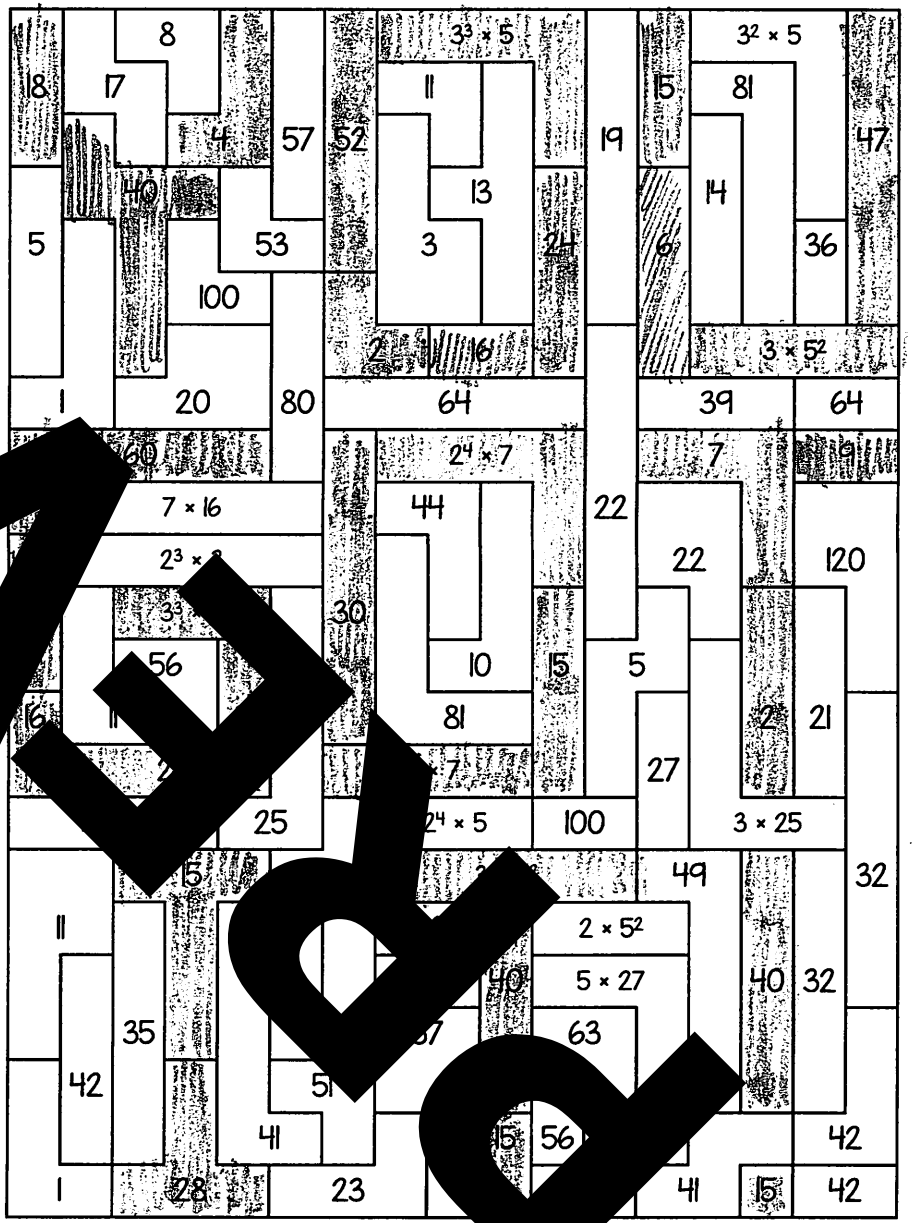
Find the prime factorization of each number. Use exponents.

11. 135 — $3^3 \times 5$
12. 75 — 3×5^2
13. 112 — $2^4 \times 7$

Find the number described.

14. the only prime number between 44 and 50 — 47
15. the smallest composite number — 4
16. the prime factor of every even number — 2
17. the number of factors of 36 — 9
18. the sum of the primes between 20 and 30 — 52

Directions: Solve each problem on the left. Shade every section of the puzzle that contains one of your answers to reveal the message. *Answers may appear in more than one section.



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Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ **Per:** _____ **Homework 11:** Greatest Common Factor & Least Common Multiple

**** This is a 2-page document! ****

List the first five multiples of each number.

1. 7
7, 14, 21, 28, 35

2. 8
8, 16, 24, 32, 40

3. 12
12, 24, 36, 48, 60

4. 25
25, 50, 75, 100, 125

Fill in the blank with the word "multiple" or "factor" to make each statement true.

5. 8 is a factor of 96

6. 9 is a multiple of 9

7. 7 is a factor of 84

8. 54 is a multiple of 6

Find the LCM of each pair of numbers.

9. 3 and 4
3: 3, 6, 9, (12), 15, 18, ...
4: 4, 8, (12), 16, 20, ...
LCM = 12

10. 5 and 7
5, 10, 15, 20, 25, 30, (35), 40
7, 14, 21, 28, (35), 42, 49
LCM = 35

11. 6 and 9
6: 6, 12, ..., 30
9: 9, ..., 27, ..., 45
LCM = 18

12. 8 and 12
8: 8, 16, (24), 32, 40, 48
12: 12, (24), 36, 48, 60
LCM = 24

Find the GCF of each pair of numbers.

13. 12 and 20
12: 1, 2, 3, (4), 6, 12
20: 1, 2, (4), 5, 10, 20
GCF = 4

14. 18 and 27
18: 1, 2, 3, 6, (9), 18
27: 1, 3, (9), 27
GCF = 9

15. 24 and 40
24: 1, 2, 3, 4, 6, (8), 12, 24
40: 1, 2, 4, 5, (8), 10, 20, 40
GCF = 8

16. 14 and 35
14: 1, 2, (7), 14
35: 1, 5, (7), 35
GCF = 7

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17. List the first three common multiples of 4 and 6.

4: 4, 8, (12), 16, 20, (24), 28, 32, (36)
6: 6, (12), 18, (24), 30, (36), 42

12, 24, 36

18. Name **all** the numbers between 30 and 50 that are multiples of both 4 and 6.

4: 32, (36), 40, 44, (48)
6: 30, (36), 42, (48)

36 and 48

19. Is 15 the GCF of 30 and 45? Explain.

30: 1, 2, 3, 5, 6, 10, (15), 30
45: 1, 3, 5, 9, (15), 45

Yes, 15 is the GCF

20. Ty says the LCM of 6 and 8 is 48 because $6 \times 8 = 48$. Is he correct? Explain.

6: 6, 12, (24), 30, 36, 42, 48
8, 16, (24), 32, 40, 48

No, the LCM is 24.

21. A florist has 30 roses and 42 daisies. She wants to make identical bouquets using all the flowers. What is the greatest number of bouquets she can make?

30: 1, 2, 3, 5, (6), 10, 15, 30
42: 1, 2, 3, 6, 7, 14, 21, 42

6 bouquets

22. One light blinks every 6 seconds. Another light blinks every 10 seconds. They just blinked at the same time. In how many seconds will they blink at the same time again?

6: 6, 12, 18, 24, (30), 36, 42
10: 10, 20, (30), 40, 50, 60

30 seconds

23. Jordan's number is thirty-something. It is a multiple of 7. It is a factor of 70. It is between 10 and 30. What is Jordan's number? Explain.

Multiples of 7: 14, 21, 28

Since 14 is the only one on that list that is a factor of 70, that is his number.

24. Hot dogs come in packs of 8 and buns come in packs of 12. Maria wants to buy the same number of hot dogs and buns. What is the least number of packs of hot dogs and packs of buns she can buy?

8: 8, 16, (24), 32, 40
12: 12, (24), 36, 48

LCM = 24

24 hotdogs → 3 packs
24 buns → 2 packs

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Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples

ONE-STEP
Word Problems

Determine if addition, subtraction, multiplic[illegible]n, or division is required to solve. Then s[illegible]

1. A gardener plants 18 rows of tulips. Each row has 6 tulips. How many tulips does the gardener plant?

Multiply; 108 tulips

$$\begin{array}{r} 18 \\ \times\ 6 \\ \hline 108 \end{array}$$

2. A store had 1,[illegible] bottle[illegible]old 8[illegible] the[illegible] How [illegible]ter[illegible]les are [illegible]

[illegible]ct;

[illegible]50
[illegible]87[illegible]

47[illegible] water bottles

3. Mia has 96 stickers. S[illegible] them equally am[illegible]ng[illegible] fr[illegible] How many stic[illegible] does ea[illegible] friend get?

[illegible]vide;

12 [illegible]ckers

$$\begin{array}{r} 12 \\ 8\overline{)9[illegible]} \\ 8 \\ \hline [illegible]6 \\ 16 \\ \hline [illegible] \end{array}$$

4. A [illegible] 2,415 fiction books and [illegible] nonfiction books. How many books does it have [illegible]ll?

Add;

4,103 books

$$\begin{array}{r} 2415 \\ +1688 \\ \hline 4103 \end{array}$$

MULTI-STEP
Word Pr[illegible]

[illegible] **mu[illegible]p word problem** needs more than one [illegible]eration [illegible] solve. Use a plan to keep your work organized!

1	[illegible]	Read the problem carefully. What is the question asking?
[illegible]	PLAN	What information do you need? Which operations will you use? In what order?
3	SOLVE	Solve each step. Show your work and label your answer.
4	CHECK	Is your answer reasonable? Use estimation to check

CLUE
Words!

Addition	sum, total, in all, altogether, combined, increased by
Subtraction	difference, how many more/fewer, left, remain, decreased by
Multiplication	product, each, per, times, groups of, total for several groups
Division	quotient, share equally, split, per, each group, how many groups

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EXAMPLES

5. Ava's school raised $1,385 at a bake sale and $1,195 at a car wash. The money is split equally among 12 classrooms. How much does each classroom get?

$$\begin{array}{r} 1385 \\ +\,1195 \\ \hline 2580 \end{array}$$

$$\begin{array}{r} 215 \\ 12\overline{)2580} \\ -24 \\ \hline 18 \\ -12 \\ \hline 60 \\ -60 \\ \hline 0 \end{array}$$

$215

6. A school collected 2,350 cans in Week 1 and 1,875 cans in Week 2. They pack the cans in boxes that hold 48 cans each. How many boxes do they need to pack all the cans?

$$\begin{array}{r} 2350 \\ +\,1875 \\ \hline 4225 \end{array}$$

[illegible] → [illegible] boxes

7. Liam's book has 850 pages. He has already read 238 pages. If he reads 35 pages each day, how many more days will it take him to finish?

$$\begin{array}{r} 850 \\ -\,238 \\ \hline 612 \end{array}$$

$$\begin{array}{r} 17 \\ 35\overline{)612} \\ -35 \\ \hline 262 \\ -245 \\ \hline 17 \end{array}$$

17 → [illegible]

8. A bakery bakes 6 trays of muffins with [illegible] muffins on each tray. It packs the muffins in boxes of 12 and sells 59 boxes. How many boxes are left?

$$\begin{array}{r} 6 \\ \times\,24 \\ \hline 144 \\ +\,720 \\ \hline 864 \end{array}$$

$$\begin{array}{r} 72 \\ 12\overline{)864} \\ -84 \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 72 \\ -\,59 \\ \hline 13 \end{array}$$

13 boxes

9. Tickets to a museum cost $18 [illegible]. A group of 125 students [illegible] and also pays $390 for buses. The total cost is shared equally by 15 parents. How much does each parent pay?

$$\begin{array}{r} 125 \\ \times\,18 \\ \hline 1000 \\ +\,1250 \\ \hline 2250 \end{array}$$

$$\begin{array}{r} 2250 \\ +\,390 \\ \hline 2640 \end{array}$$

$$\begin{array}{r} 176 \\ 15\overline{)2640} \\ -15 \\ \hline 114 \\ -105 \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

$176

10. A jacket costs $65. This week it is on sale for $18 off. Erin has $250 and buys 3 jackets on sale. With the money left, how many $12 hats can she buy?

$$\begin{array}{r} 65 \\ -\,18 \\ \hline 47 \end{array}$$

$$\begin{array}{r} 47 \\ \times\,3 \\ \hline 141 \end{array}$$

$$\begin{array}{r} 250 \\ -\,141 \\ \hline 109 \end{array}$$

$$\begin{array}{r} 9 \\ 12\overline{)109} \\ -108 \\ \hline 1 \end{array}$$

9 R1 → 9 hats

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MULTI-STEP WORD PROBLEMS *Relay Puzzle!*

Directions: S[illegible] pr[illegible]ns, using the arrows to guide you through the page. Use the answer from your previous problem to fill in the blank [illegible] next [illegible]em. [illegible]rough the page until you reach the end. Show all work neatly on a separate sheet of paper.

Start!

1 A school buys 1[illegible]oxes of [illegible]kers with 24 markers in each [illegible] also has 36 loose markers. [illegible] many markers does it have [illegible] all?

468 marke[illegible]

2 [illegible]e 468 markers are shared [illegible]ally among 12 classrooms. Each [illegible]oom gives away 9 markers. [illegible]w many markers does each [illegible]oom have left?

30 markers

3 Each of 30 students reads 14 books in the fall and 11 books in the spring. How many books do the students read in all?

750 books

4 A library has 750 books. It buys 36 boxes with 25 books in each box, then donates 450 books. How many books does it have now?

1200 books

5 A theat[illegible] tickets on Friday [illegible],320 tic[illegible]on Satur[illegible]. Each ticket cos[illegible] How muc[illegible] money does th[illegible]eater collect?

[illegible]0,1[illegible]

6 Mrs. Fox has $20,160. She spends $8,745 on computers and $3,615 on furniture. How many $350 tablets can she buy with the money left?

22 tablets

7 Each of 22 classes collects 85 cans on Monday and 65 cans on Tuesday. How many cans do the classes collect in all?

3,300 cans

8 A farm picks 3,300 pounds [illegible] apples in September and 2,400 pounds in October. It sells 1,500 pounds. How many pounds of apples are left?

4,200 pounds

9 [illegible]arries 4,200 pounds [illegible]5-pound boxes. The driver [illegible]ads 48 boxes, then 36 more. The rest [illegible]arts of 1[illegible] boxes each. [illegible]needed?

[illegible]arts

End!

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MULTIPLEXER

Name: _____ **Unit 1:** Place Value & Whole Numbers

Date: _____ Per: _____ **Homework 12:** Multi-Step Word Problems

**** This is a 2-page document! ****

Determine if you need to add, subtract, multiply, or divide. Then solve.

1. A robotics club builds 14 robots. Each robot uses 25 screws. How many screws does the club use?

Operation: Multiplication

$$\begin{array}{r} 14 \\ \times 25 \\ \hline 70 \\ +280 \\ \hline 350 \end{array}$$

350 screws

2. A rocket needs to travel 2,[illegible] miles to reach its target. It has already traveled 1,365 miles. How many more miles does it need to travel?

Operation: Subtraction

$$\begin{array}{r} 2[illegible]0 \\ -\ [illegible]65 \\ \hline [illegible]75 \end{array}$$

[illegible]75 miles

3. An aquarium has 144 fish. They are placed equally into 9 tanks. How many fish are in each tank?

Operation: Division

$$\begin{array}{r} 16 \\ 9\overline{)144} \\ -9 \\ \hline 54 \\ -54 \\ \hline \end{array}$$

[illegible]sh

4. A [illegible]'s first video got 3,276 views and her [illegible]deo got 2,849 views. How many [illegible]d her videos get in all?

Operation: Addition

$$\begin{array}{r} 3276 \\ 2849 \\ \hline 6125 \end{array}$$

6,125 views

Solve [illegible] problems. Show all of your steps. Read, Plan, Solve, Check!

5. A soc[illegible]ga[illegible]76 from team photos [illegible]24 from pancake [illegible]fast[illegible]oney is split equally [illegible]g 18 [illegible]ow much money does ea[illegible]eam ge[illegible]

$$\begin{array}{r} 6 \\ 24 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 150 \\ 18\overline{)2700} \\ -18 \\ \hline 90 \\ -90 \\ \hline 00 \\ -0 \\ \hline 0 \end{array}$$

$150 each

6. A shoe factory made 2,154 sneakers on Monday and 1,878 sneakers on Tuesday. The sneakers are shipped in crates that hold 36 sneakers each. How many crates does the factory fill?

$$\begin{array}{r} 2154 \\ +\ 1878 \\ \hline 4032 \end{array}$$

$$\begin{array}{r} 112 \\ 36\overline{)4032} \\ -36 \\ \hline 43 \\ -36 \\ \hline 72 \\ -72 \\ \hline 0 \end{array}$$

112 crates

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7. A camp counselor buys 18 packs of glow sticks with 12 glow sticks in each pack. Of those, 24 glow sticks do not work. She shares the rest equally among 6 cabins. How many glow sticks does each cabin get?

$$\begin{array}{r} 18 \\ \times\ 12 \\ \hline 36 \\ +\ 180 \\ \hline 216 \end{array} \qquad \begin{array}{r} 216 \\ -\ 24 \\ \hline 192 \end{array} \qquad \begin{array}{r} 32 \\ 6\overline{)192} \\ -18 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

$\boxed{\text{32 glow sticks}}$

8. A stadium has 25 sections with 48 seats in each section. It also has 16 suites with 30 seats in each suite. How many seats does the stadium have altogether?

$$\begin{array}{r} 25 \\ \times\ 48 \\ \hline 200 \\ +\ 1000 \\ \hline 1200 \end{array} \qquad \begin{array}{r} 16 \\ \times\ 30 \\ \hline 00 \\ +\ 480 \\ \hline 48[illegible] \end{array} \qquad \begin{array}{r} 12[illegible] \\ +\ 48[illegible] \\ \hline [illegible] \end{array}$$

$\boxed{[illegible]0 \text{ seats}}$

9. A toy store receives 128 boxes with 24 action figures in each box. It sets aside 450 figures for a window display. The rest are packed into bags that hold 35 figures each. How many bags are needed to hold the rest of the figures?

$$\begin{array}{r} 128 \\ \times\ 24 \\ \hline 512 \\ +\ 2560 \\ \hline 3072 \end{array} \qquad \begin{array}{r} 3072 \\ -\ 450 \\ \hline 2622 \end{array} \qquad \begin{array}{r} 74[illegible] \\ [illegible]22 \\ -\ 2[illegible] \\ \hline 17[illegible] \\ -140 \\ \hline [illegible]32 \end{array}$$

[illegible]2 → $\boxed{[illegible]\text{gs}}$

10. [illegible]ater p[illegible]d 1,32[illegible]ses on Friday [illegible] 1,578 pa[illegible]rday. Each pass [illegible]$9. The pa[illegible] made $2,145 re[illegible]ubes. How much money did the wat[illegible]e in all?

$$\begin{array}{r} 1326 \\ +\ 157[illegible] \\ \hline [illegible]904 \end{array} \qquad \begin{array}{r} 2904 \\ \times\ 9 \\ \hline 26136 \end{array}$$

$$\begin{array}{r} 26136 \\ +\ 2145 \\ \hline 28281 \end{array}$$

$\boxed{\$28{,}281}$

11. A [illegible] shop [illegible]364 trading cards. It sells [illegible]e. It puts the [illegible]st into [illegible]ells each pack [illegible] Ho[illegible] money will the shop [illegible]rom [illegible]ks?

$$\begin{array}{r} 8[illegible] \\ [illegible] \\ \hline [illegible]6 \end{array} \qquad \begin{array}{r} 48 \\ 12\overline{)576} \\ -48 \\ \hline 96 \\ -96 \\ \hline 0 \end{array} \qquad \begin{array}{r} 48 \\ \times\ 8 \\ \hline 384 \end{array}$$

$\boxed{\$384}$

12. A whale-watching company sends out 15 boats. Each boat holds 52 people. If 638 tourists and 87 guides ride the boats, how many seats are empty?

$$\begin{array}{r} 15 \\ \times\ 52 \\ \hline 30 \\ +\ 750 \\ \hline 780 \end{array} \qquad \begin{array}{r} 638 \\ +\ 87 \\ \hline 725 \end{array} \qquad \begin{array}{r} 780 \\ -\ 725 \\ \hline 55 \end{array}$$

$\boxed{\text{55 empty seats}}$

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Name: _____ **Math 5**

Date: _____ Per: _____ **Unit 1:** Place Value & Whole Numbers

Quiz 1-3: Primes, Factors, Multiples & Word Problems

1. a) List all the factors of **52**. **b)** Is 52 prime or composite?

1 x 52
2 x 26
4 x 13

2. Which number is prime? **27** **43** **49** **75**

9x3 7x7 [illegible]x25

3. Is **141** prime or composite? Explain.

3x47 = 141 ; it has fa[illegible]s other than one [illegible] its[illegible]f.

4. Use a factor tree to find [illegible] prime factorization of **120**.

12 [illegible]0
4
2

5. What n[illegible] [illegible]zation of **2 × 2 × 3 × 3 × 5** ?

4 × 9 × 5

36 × 5 = 180

[illegible]e prime factorization of **132** and show how two [illegible]t factor trees lead to the same prime factorization.

132
4 33
2 2 3 11

132
6 22
2 3 2 11

1a. 1, [illegible] 13, [illegible] 52

1b. Com[illegible]

2. [illegible]

[illegible] composite

[illegible] 2^3 [illegible]3 x 5

[illegible] 180

6. $2^2 \times 3 \times 11$

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7. List the first five multiples of **9**.

7. 9, 18, 27, 36, 45

8. a) Find the GCF of **24 and 32.**

24: 1, 2, 3, 4, 6, (8), 12, 24

32: 1, 2, 4, (8), 16, 32

8a. 8

b) Find the LCM of **24 and 32.**

24: 24, 48, 72, (96)

32: 32, 64, (96), 128

8b. 96

9. [illegible]

[illegible]

11. [illegible]

14 buses

PREVIEW

For questions 9-12: Solve each word problem. Show your work.

9. A zoo has 1,512 pounds of hay. Each day, the [illegible] eat 35 pounds of hay and the giraffes eat 19 pounds of hay. How many days will the hay last?

35
+19
54

28
54)1512
-108
432
-432
0

10. A store gets 28 boxes of granola bars with 45 bars in each box. The bars are stocked equally among 15 shelves. How many bars go on each shelf?

28
x45
140
+1120
1260

84
15)1260
-120
60
-60
0

11. Ben has [illegible] for $28 each and a pair of [illegible] for [illegible]. How much money does he have left?

[illegible]
+138

200
-138
62

12. [illegible]ool has 25 classes with 24 students each. All of the students and 22 teachers are going on a trip. Each bus holds 45 people. How many buses are needed?

25
x24
100
+500
600

600
+22
622

13 R37 → 14

13
45)622
-45
172
-135
37

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Unit 1 Test Study Guide
(Place Value & Whole Numbers)

Name: _____

Date: _____ Per: _____

Topic 1: Place Value & Number Forms

Use the number 43,186,725 for questions 1-4.

1. What digit is in the ten thousands place?

8

2. What is the place of the 7?

Hundreds

3. What is the value of the 3?

3,000,000

4. What is 100,000 mor[illegible]than th[illegible]

43,286,725

Write each number in standard form.

5. eight million, five hundred two thousand, sixty

8,502,060

6. 700,000 + [illegible]00 + 4[illegible]0 + 9

73[illegible]

7. Write in word form: **3,250,708**

Three million, two hundre[illegible]y tho[illegible], seven hundred eight

8. Write in expanded form: **5,040,617**

5,000,000 + 40,000 + 6[illegible]00 + 10[illegible]

Compare the values by filling in the [illegible]g < [illegible]r = symbol.

9. 3,407,215 (<) 3,470,[illegible]

[illegible]ixty thousand, eight (<) 60,080

Answer each question.

11. Order the numbers from [illegible]o great[illegible]

274,830 [illegible] 274,[illegible]

3 2

27,483[illegible]; 2,748,300

12. In 3,300, the value of the 3 in the thousands place is 10 times the value of the 3 in the hundreds place.

T[illegible]wers[illegible] Exponents

[illegible]onen[illegible]n.

13. 10[illegible] × 10 × 10[illegible]0 × 10 × 10 × 10

10^8

[illegible]each question.

14. [illegible]000 as a power of 10.

10^3

15. Write 10^6 as repeated multiplication. Then find the value.

10 x 10 x 10 x 10 x 10 x 10 = 1,000,000

16. Write in expanded form using powers of 10: **1,090,300**

$(1 \times 10^6) + (9 \times 10^4) + (3 \times 10^2)$

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17. Write in standard form:
$(4 \times 10^6) + (2 \times 10^4) + (5 \times 10^1) + 3$

4,000,000 + 20,000 + 50 + 3

= 4,020,053

18. How many zeros are in the standard form of 10^{11}? Write the number in standard form.

11 zeros;

100,000,000,000

Compare the values by filling in the circle with a <, >, or = symbol.

19. 10^5 (>) $10 \times 10 \times 10 \times 10$

10^4

20. $100 \times 1{,}000$ (=) 10^5

Topic 3: Multiplying & Dividing by Powers of 10

Find each product or quotient.

21. 56×10^4

560,000

22. 9,300,0[illegible] $\div 10^5$

9[illegible]

Use multiplication and division facts and count the ze[illegible] multiply[illegible]ide.

23. 70×800

56,000

[illegible]$0 \div 90$

[illegible]600

Find the missing value that makes each staten[illegible]rue.

25. $64 \times$ 10,000 $= 640$[illegible]

52,[illegible] $\div 10^3 = 52$

Topic 4: Rounding & Estimatin[illegible]

Round each number to th[illegible]ce ind[illegible]ted.

27. 7,358,240; hundred[illegible]ds

7,400,000

28. 46,951; hundreds

47,000

29. 283,617; te[illegible]ds

28[illegible]0

30. 1,945,302; millions

2,000,000

Estimate e[illegible]m[illegible] rounding to the place indicated.

31. [illegible]8 + [illegible] earest thousand)

3[illegible] + [illegible] = 60,000

32. 8,412 − 3,675 (nearest hundred)

8400 − 3700 = 4,700

[illegible]the product by rounding each factor to its greatest place. Estimate each quotient using c[illegible]ble numbers.

33. [illegible]

6000 × 7 = 42,000

34. 584 × 37

600 × 40 = 24,000

35. 2,738 ÷ 9

2700 ÷ 9 = 300

36. 3,519 ÷ 68

3500 ÷ 70 = 50

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Topic 5: Multi-Digit Multiplication

Find each product.

37. 486 × 29

$$\begin{array}{r} 486 \\ \times\ 29 \\ \hline 4374 \\ +\ 9720 \\ \hline 14094 \end{array}$$

$\boxed{14{,}094}$

38. 703 × 56

$$\begin{array}{r} 703 \\ \times\ 56 \\ \hline 4218 \\ +35150 \\ \hline 39368 \end{array}$$

$\boxed{\ldots{,}368}$

39. 2,147 × 38

$$\begin{array}{r} 2147 \\ \times\ 38 \\ \hline 17176 \\ +64410 \\ \hline 81586 \end{array}$$

$\boxed{81{,}586}$

40. 5,078 × [illegible]

$$\begin{array}{r} 50[illegible] \\ \times\ [illegible]43 \\ \hline [illegible]34 \\ +20[illegible]0 \\ \hline 218,[illegible] \end{array}$$

$\boxed{218{,}354}$

Topic 6: Division with 1-Digit & 2-[illegible] Divi[illegible]

Find each quotient. Show all [illegible].

41. 3,528 ÷ 7

$$\begin{array}{r} 504 \\ 7\overline{)3528} \\ -35 \\ \hline [illegible]0 \\ \hline [illegible]28 \end{array}$$

$\boxed{504}$

42. 5,214 ÷ 8

$$\begin{array}{r} 651 \\ 8\overline{)5214} \\ -48 \\ \hline 41 \\ -40 \\ \hline 14 \\ -8 \\ \hline 6 \end{array}$$

$\boxed{651\ R6}$

43. 2,41[illegible]6

$$\begin{array}{r} 67 \\ [illegible]\overline{)2412} \\ 216 \\ \hline 252 \\ -252 \\ \hline 0 \end{array}$$

$\boxed{67}$

44. 7,630 ÷ 42

$$\begin{array}{r} 181 \\ 42\overline{)7630} \\ -42 \\ \hline 343 \\ -336 \\ \hline 70 \\ -42 \\ \hline 28 \end{array}$$

$\boxed{181\ R28}$

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Topic 7: Interpreting Remainders

Solve each problem. Interpret the remainder and give the answer.

45. A hotel needs to wash 340 towels. Each load of laundry holds 24 towels. How many loads are needed?

$$\begin{array}{r} 14 \\ 24\overline{)340} \\ -24 \\ \hline 100 \\ -96 \\ \hline 4 \end{array}$$

14R4 → $\boxed{\text{15 loads}}$

46. Ava has $175 to spend on swim lessons. Each lesson costs $14. How many lessons can she pay for?

$$\begin{array}{r} 12 \\ 14\overline{)175} \\ -14 \\ \hline 35 \\ -28 \\ \hline \end{array}$$

12 [illegible] → $\boxed{\text{[illegible] lessons}}$

47. A beekeeper collects 860 ounces of honey. She fills jars that hold 36 ounces each. How many ounces of honey will be left over?

$$\begin{array}{r} 23 \\ 36\overline{)860} \\ -72 \\ \hline 140 \\ -108 \\ \hline 32 \end{array}$$

23 R32 → $\boxed{\text{32 ounces}}$

48. A science lab has [illegible] share equally amo[illegible] 25 ta[illegible] magnets [illegible] each table[illegible]

25 [illegible]

9 R5 → $\boxed{\text{[illegible] magnets}}$

Topic 8: Prime & Composite Numbers

List all the factors of the number. Then tell wh[illegible] it is prim[illegible] mp[illegible]site.

49. 64

1, 2, 4, 8, 16, 32, 64

Composite

50. 29

1, 29

Prime

Tell whether each num[illegible] prime [illegible] mposite. If composite, write it as a product of two factors.

51. 121

Composite ; 11 x [illegible]

52. 139

Prime

53. 105

Compos[illegible] 3 x 35

54. 115

Composite ; 5 x 23

[illegible]ic 9[illegible] [illegible]e Factorization

[illegible]ctor tree to find the prime factorization of each number.

5[illegible]

7

2 5

$\boxed{2 \times 5 \times 7}$

56. 104

2 52

2 26

2 13

$\boxed{2^3 \times 13}$

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Topic 10: Greatest Common Factor & Least Common Multiple

57. List the first five multiples of 15. 15, 30, 45, 60, 75

Find the LCM of each pair of numbers.

58. 5 and 6

5: 5, 10, 15, 20, 25, (30), 35

6: 6, 12, 18, 24, (30), 36

30

59. 12 and 18

12: 12, 24, (36), 48

18: 18, (36), 54, 72

Find the GCF of each pair of numbers.

60. 27 and 36

27: 1, 3, (9), 27

36: 1, 2, 3, 4, 6, (9), 12, 18, 36

9

61. 32 and 56

32: 1, 2, (8), 16, 32

56: 1, [illegible], 14, 28, 56

8

Topic 11: Multi-Step Word Problems

Read each problem carefully. Show all of your ste[illegible]lan, Solve, [illegible]!

62. A car wash washed 286 cars for $12 each Saturday and 345 cars for $9 each on Sunday. How much money did the car wa[illegible] make in all?

286 × 12 = 572; 572 + 2860 = 3432

345 × 9 = 3105

3432 + 3105 = [illegible]

$[illegible]

63. A[illegible]l shelter g[illegible]ts 16 bags of dog food that [illegible]ounds each and 8 bags that weigh [illegible]ds each. It splits all of the food equally [illegible]ng 4 kennels. How many pounds does ea[illegible]n kennel get?

[illegible]5 × 8 = 320; [illegible]80 + 320 = 400

40 × 8 = 320

400 + 320 = 720

720 ÷ 4 = 180

180 lbs.

64. The art [illegible]. It buys an [illegible] for $[illegible] and 28 paint sets for $7 each. [illegible]ch m[illegible] will the club have left?

28[illegible]

[illegible] + 196 = 381

500 − 381 = 119

$119

65. A candle shop makes 48 candles each hour for 9 hours. It packs the candles into gift sets of 6. Each gift set sells for $8. How much money does the shop make if it sells every gift set?

48 × 9 = 432

432 ÷ 6 = 72

72 × 8 = 576

$576

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Name: _____

Date: _____ Per: _____

Unit 1 Test

Place Value & Whole Numbers

1. Write the number below in standard form.

"Nine million, two hundred thousand, eighty-five"

9,200,085

2. Which statement about the numb[illegible]ow is true?

58,407,13[illegible]

A. There is a 4 in t[illegible] thou[illegible] pla[illegible]
B. There is an 8 in th[illegible] pl[illegible]
C. There is [illegible] the ten[illegible]
D. There[illegible] in the hundred[illegible]

B

Use the number 26,483,150 for questions 3 and 4.

3. What is the value of the 6?

6,000,000

4. R[illegible]nd th[illegible]er to the [illegible]arest hundred [illegible]usand.

6,500,000

5. Which shows the number below in expand[illegible] form?

3,070,204

A. 3,000,000 + 700,0[illegible],000 +
B. 300,000 + 70,000 +
C. 3,000,000 + 70,000 +
D. 3,000,00[illegible] + 200

C

6. The va[illegible]3 in 230,000 is how many times th[illegible]e of the 3 in 13,000?

A. 10
B. 100
C. 1,000
D. 10,000

A

7. Which v[illegible]s are[illegible]al to 100,[illegible]heck all that apply.

- [x] 10[illegible]
- [ ] [illegible],000 × 100
- [ ] 100 × 100
- [ ] 10 × 5
- [x] 10×10^4

8. Whic[illegible]ows 704,[illegible]n expanded form using po[illegible] of 10?

A. $(7 \times 10^6) + (4 \times 10^4) + (8 \times 10^2)$
B. $(7 \times 10^5) + (4 \times 10^4) + (8 \times 10^1)$
C. $(7 \times 10^4) + (4 \times 10^3) + (8 \times 10^1)$
D. $(7 \times 10^5) + (4 \times 10^3) + (8 \times 10^1)$

D

9. Find the product.

83×10^5

8300000

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10. Find the product.

50 × 700

A. 3,500
B. 35,000
C. 350,000
D. 3,500,000

B

11. Find the quotient.

6,300 ÷ 70

12. Round 8,371,652 to the nearest ten thousand.

8,370,000

13. Estimate the diff[illegible] by ro[illegible]g ea[illegible] number to the nea[illegible]

6,837 − 2,41[illegible]

− 2000

A 4,00[illegible]
,400
4,418
00

D

14. Which numbers round to 450,000 when r[illegible]ed to the [illegible]st ten thousand? Check all that apply.

- ☑ 449,512
- ☐ 455,000
- ☐ 405,000
- ☑ 445,0[illegible]
- ☐ 444,999
- ☑ 454,999

15. Estimate the quotient [illegible] compatible numbers.

3,184

÷80

A. 4[illegible]
B. 40
[illegible]00
[illegible]0

B

[illegible]nd the product.

657 × 74

$$\begin{array}{r} 657 \\ \times\ 74 \\ \hline 2628 \\ +45990 \\ \hline 48618 \end{array}$$

48,618

17. A t[illegible] carries 14[illegible] crates. Each crate holds [illegible]. How many jars does the truck carry?

$$\begin{array}{r} 146 \\ \times\ 36 \\ \hline 876 \\ +4380 \\ \hline 5256 \end{array}$$

A. 5,256
B. 5,156
C. 6,256
D. 52,560

A

18. Find the quotient.

4,332 ÷ 6

$$\begin{array}{r} 722 \\ 6\overline{)4332} \\ -42 \\ \hline 13 \\ -12 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

722

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19. Find the quotient.

6,804 ÷ 28

```
      243
28 ) 6804
    -56
     120
    -112
       84
      -84
        0
```

243

20. Find the quotient.

9,215 ÷ 43

```
      214
43 ) 9215
    -86
      61
     -43
      185
     -[illegible]
```

[illegible] 13

21. There are 315 people going on a boat tour. Each boat holds 24 people. How many boats are needed?

```
      13
24 ) 315
    -24
      75
     -72
       3
```

13 [illegible]

A. 3 boats
B. 13 boats
C. 14 boats
D. 15 boats

C

22. A pet [illegible] dog treats. It puts 18 [illegible]ats in [illegible]g. How [illegible]y bags can it fill [illegible]mpletely [illegible]

```
      7
18 ) [illegible]
    -3[illegible]
     130
    -126
       4
```

27 R4

A. 4 bags
B. 27 bags
C. 28 bags
D. 30 bags

B

23. Which numbers are pr[illegible]eck all th[illegible]t apply.

☐ [illegible]3 ☑ [illegible] ☐ 25 ☑ 29 ☐ 35 ☑ 23

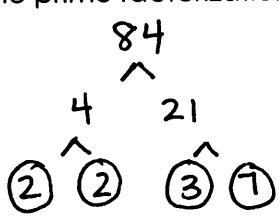
2[illegible] [illegible]ch lis[illegible] all of the factors of 76?

1x[illegible]
2x[illegible]
[illegible] 19

A. 1, 2, 19, 38, 76
B. 1, 2, 4, 19, 76
C. 2, 4, 19, 38
D. 1, 2, 4, 19, 38, 76

D

25. Write the prime factorization of 84.



84
4 21
2 2 3 7

$2^2 \times 3 \times 7$

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26. What is the greatest common factor of 45 and 75?

45: 1, 3, 5, 9, (15), 45

75: 1, 3, 5, (15), 25, 75

15

27. What is the least common multiple of 6 and 8?

6: 6, 12, 18, (24), 30, 36

8: 8, 16, (24), 32, 40

A. 2
B. 14
C. 24
D. 48

C

28. Which numbers are common multiples of 4 and 5? Check all that apply.

☐ 45 ☑ 20 ☐ 30 ☑ ☐ 90 ☐ 80

29. A school buys 14 boxes of pencils with 36 pencils in each box. It gives 120 pencils to the art club. It shares the rest equally among 8 classrooms. How many pencils does each classroom get?

$$\begin{array}{r} 14 \\ \times 36 \\ \hline 84 \\ +420 \\ \hline 504 \end{array}$$

$$8\overline{)384}$$

$$\begin{array}{r} 32 \\ \hline 64 \\ -64 \\ \hline 0 \end{array}$$

48 pencils

30. Olivia has $320. She buys 4 games for $38 each and a headset for $65. How much money does she have left?

$$\begin{array}{r} 38 \\ \times 4 \\ \hline 152 \end{array} \qquad \begin{array}{r} 152 \\ +65 \\ \hline 217 \end{array} \qquad \begin{array}{r} 320 \\ -217 \\ \hline 103 \end{array}$$

A. $103
B. $168
C. $217
D. $255

A

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I use clipart and fonts in my products.



















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Many thanks to these talented artists!