

RATIONAL EXPRESSIONS

Directions: Simplify each expression completely. Identify the result as a sum, difference, product, or quotient. Simplify the result, then color the picture accordingly. STA

SET 1

1

$$\frac{28x^2y^5}{42x^2y^9}$$

3

$$\frac{15x^4y^3}{4x^8y} \cdot \frac{2x^5y^2}{3x^4y^3}$$

5

$$\frac{8x-40}{x^2-x-2} \cdot \frac{x^2+6x+5}{x^2-25}$$

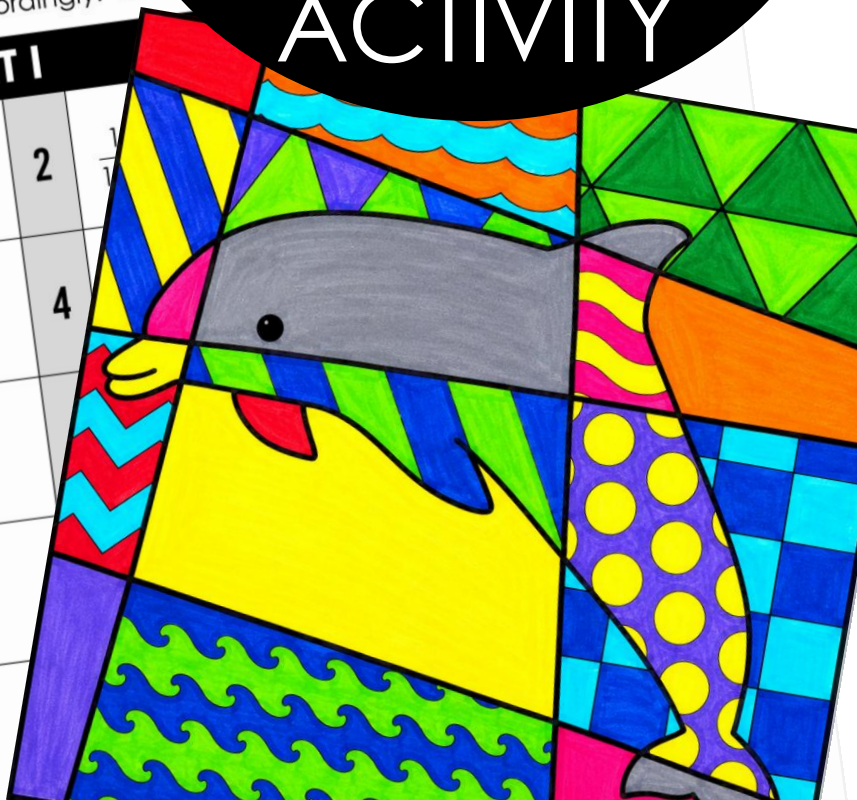
7

$$\frac{16x^6y^5}{15x^3y^3} \div \frac{2x^5y^{10}}{3x^4y^8}$$

9

$$\frac{x^2-13x+30}{x^2-27} \div \frac{x^2-2x-8}{x^2+5x-36}$$

COLORING ACTIVITY



RATIONAL EXPRESSIONS

(Simplify, Multiply, Divide)

Created by: ALL THINGS ALGEBRA®

RATIONAL EXPRESSIONS

(Simplifying, Multiplying, & Dividing)

Coloring Activity!

Objective: Students will practice simplifying, multiplying, and dividing rational expressions with this coloring activity. Students should be able to simplify monomials, factor out a greatest common factor (GCF), factor differences of squares, and factor trinomials of the form $ax^2 + bx + c$ where $a \geq 1$. Opposite factors such as $(x - a)$ and $(a - x)$ are included. This activity was designed for an Algebra 2 course.

Directions:

- 1) Copy the activity worksheet and dolphin coloring picture for each student. I typically copy the coloring sheet on the back to save paper. I have my students show all work on a separate sheet of notebook paper.
- 2) If working in partners, Partner A completes Set 1 and Partner B completes Set 2. Each partner simplifies the problems in their set. They check with each other for matching answers to determine how to color the picture.

I highly recommend this as a partner activity!

For example, if the answer to #1 is $(x + 1)/3x$ and the answer to Dark Blue is also $(x + 1)/3x$, then all 1's on the picture are Dark Blue. If the answer to #2 is $(x - 4)/(x + 2)$ and the answer to Red is also $(x - 4)/(x + 2)$, then all 2's on the picture are Red. And so on.

This can also be done as an independent activity where each student completes both sets (20 total problems).

- 3) After solving all the problems, students can color the picture. I have them staple their work to the paper and turn in for a classwork grade.

RATIONAL EXPRESSIONS *Coloring Activity!*

Directions: Simplify each expression completely. Identify matching answers between Set 1 and Set 2, then color the picture accordingly. **STAPLE ALL WORK TO THIS PAPER.**

SET 1	
1	$\frac{25x^3y^2}{42x^2y^2}$
3	$\frac{15x^2y^3}{4x^2y^3} \cdot \frac{2x^2y^3}{3x^2y^3}$
5	$\frac{8x - 40}{x^2 - x - 2} \cdot \frac{x^2 + 6x + 5}{x^2 - 25}$
7	$\frac{16x^2y^2}{15x^2y^3} \cdot \frac{2x^2y^{10}}{3x^2y^2}$
9	$\frac{x^3 - 13x + 30}{x^2 + 6x - 27} \cdot \frac{x^3 - 2x - 8}{x^2 + 5x - 36}$

RED	$\frac{x^3 + 9x + 20}{2x^2 + 9x - 5}$
YELLOW	$\frac{6x - 2x^2}{32x + 8} \cdot \frac{40x + 10}{5x^2 - 15x^2}$
DARK GREEN	$\frac{4x^3 - 4x}{4x^2 + x - 3} \cdot \frac{16x^3 - 12x}{10x - 10}$
DARK BLUE	$\frac{2x^2y^3}{x^2y^3} + \frac{8x^2y^3}{10x^2y^3}$
PINK	$\frac{8x^2y^3}{15x^2y^3} + \frac{4x^2y^3}{50y^3}$

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