

1

FIND THE SOLUTION
to the equation below.

$$2^{3x+7} = 4x-1$$

- A) $x = 6$
- B) $x = 8$
- C) $x = 8/7$
- D) $x = -8$
- E) $x = 6/7$

5

FIND THE SOLUTION
to the equation below.

$$4x-11$$

Halloween
 irth of July
 w Year's Day
 r birthday
 atrick's Day

9

FIND THE SOLUTION
to the equation below.

$$6 \cdot \left(\frac{1}{36}\right)^{-9x-1} = \left(\frac{1}{216}\right)^{8-7x}$$

- | | |
|---------------|--------------------|
| A) $x = 25/3$ | arm wrestling |
| B) $x = -7$ | taking Snapchats |
| C) $x = 2/3$ | live tweeting |
| D) $x = 9$ | signing autographs |
| E) $x = 1/3$ | drinking slurpees |

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EXPONENTIAL EQUATIONS with a common base

MATH LIB ACTIVITY

Created by: ALL THINGS ALGEBRA®

EXPONENTIAL EQUATIONS

"Math Lib" Activity!

Objective: To practice solving exponential equations using a **common base**. Knowledge of positive and negative exponents needed. Some questions require students to combine bases on one side of the equation. This activity was created for an Algebra 2 level class.

Activity Directions: Print and post the ten stations around the room. Give each student the worksheet to record their work as they travel to the stations. Group students (I typically do groups of 3) and assign to a starting problem. Set the timer for 3-4 minutes (more if needed). Students solve the equation at the station, recording their work on their recording worksheet. They look for their answer and record the piece to the story on the math lib. When the timer goes off, they move to the next station.

You are able to edit each slide to change the teacher name and all story elements to personalize for your students. PowerPoint is required to edit the slides. They enjoy seeing which one of their teachers is the "star" of the story!

The image displays several components of the "Math Lib" activity:

- Station 1:** "FIND THE SOLUTION to the equation below." $2^{3x+7} = 2^{4x-1}$. Options: A) $x = 6$, B) $x = 8$, C) $x = 8/7$, D) $x = -8$.
- Station 5:** "FIND THE SOLUTION to the equation below." $\left(\frac{1}{7}\right)^{-2} = 49^{4x-11}$. Options: A) $x = 3$, B) $x = 9/4$, C) $x = 13/4$, D) $x = -5$, E) $x = 13/2$.
- Station 9:** "FIND THE SOLUTION to the equation below." $6 \cdot \left(\frac{1}{36}\right)^{-9x-1} = \left(\frac{1}{216}\right)^{8-7x}$. Options: A) $x = 25/3$, B) $x = -7$, C) $x = 2/3$, D) $x = 9$, E) $x = 1/3$.
- Student Worksheet:** Titled "EXPONENTIAL EQUATIONS 'Math Lib!'". It includes directions: "Solve the exponential equation at each station. Identify the answer and fill in the blanks on the back to complete the story." It features a grid for recording answers and a section for writing the math lib story.
- Math Lib Template:** A box titled "WRITE YOUR MATH LIB BELOW!" with numbered blanks for a story. The story text includes: "arm wrestling", "taking Snapchats", "live tweeting", "signing autographs", and "while wearing".

10 Stations & Student Worksheet
(All story elements are editable!)