keep scrolling to get a sneak peek!

Help your Algebra 2 and Pre-Calculus students practice **evaluating logarithms** using properties of logs. Students will be eager to get the self-checking benefits from this circuit activity!

EVALUATING LOGARITHMS
Differentiated Circuit Worksheet

Date: _____

...ey

...ING LOGS WITHOUT A CALCULATOR CIRCUIT

...is a route that starts and ends at the same place. Start in the first box label...
...blem. Search through the remaining boxes for the answer you got for quest...
...at question. Continue until you have completed the questions and you are b...
...tion. Record your path below.

$\underline{4} \rightarrow \underline{8} \rightarrow \underline{2} \rightarrow \underline{7} \rightarrow \underline{3} \rightarrow \underline{9} \rightarrow \underline{5} \rightarrow \underline{6} \rightarrow$

...0	# **6**	Previous Answer: 1
...arithm without a calculator.		2. Simplify the logarithm without a calcu...
$\log_2 32$		$\log_3(1/9)$
$\log_2(2^5)$		$\log_3(3^{-2})$
$\boxed{5}$		$\boxed{-2}$

...er: 1...	# **7**	Previous Answer: 4
...loc...	...ulator.	4. Simplify the logarithm without...
		$\log_4 16$

EVALUATING LOGS WITHOUT A CALCULAT...

Directions: A circuit is a route that starts and ends at the same place. Sta...
1 and solve the problem. Search through the remaining boxes for the answ...
1. Now complete that question. Continue until you have completed the que...
to the original question. Record your path below.

$1 \rightarrow \underline{} \rightarrow \underline{} \rightarrow \underline{} \rightarrow \underline{} \rightarrow$

Previous Answer: -1		Previous Answer: -1/2
1. Simplify the logarithm without a calculator.	#_____	2. Simplify the logarithm w...
$\log_{1/3}(1/27)$		$\log_{1/2}$...

Previous Answer: 1/3	Previous Answer: -3
3. Simplify the logarithm without a calculator.	4. Simplify the logarithm wit...
$\log_9 81$	

Math
with Ms. Rivera

2 Versions + Answer key included

why do you need this?

Evaluating Logarithms Circuit

✏️ It's self-checking! Your students will know if they are correct or not.

✏️ 2 differentiated versions for all students practice this essential math skill.

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Evaluating Logarithms Circuit *includes*:

Challenge: Prove algebraically that $\log_{\frac{1}{b}} b = -1$ for $b > 0, b \neq 1$

How are you feeling about this topic? Circle one:

Helpful Hints: Use these hints to help you solve the problems.

Try this:
Can the argument, or value, be rewritten as an exponent where the base is the same as the base of the logarithm?

Ex: We can rewrite $\log_2 4$ as $\log_2 (2^2)$.

Basic Log Rules:

$\log_a 1 = 0$

$\log_a a = 1$

$\log_a a^x = x$

How are you feeling about this topic? Circle one:

✅ 10 self-checking problems

✅ a detailed answer key

✅ a standard version with an extension question

✅ a basic version with helpful hints section

✅ student self assessment

Evaluating Logarithms Circuit

standards covered:

CCSS: HSA–SSE.B.3, HSF–LE.A.4

TEKs: A2.5.C

how this circuit resource works

Then search for their answer on the worksheet. Once the answer is found, students complete the problem below it.
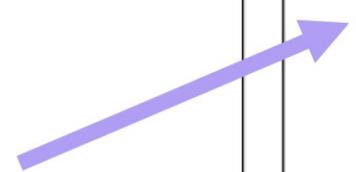
Students can track their path at the top.

Students start with the first question.

The last question they answer should lead back to problem #1 to "close" the circuit.

Name: _____   Date: _____

EVALUATING LOGS WITHOUT A CALCULATOR CIRCUIT

<u>Directions:</u> A circuit is a route that starts and ends at the same place. Start in the first box labeled 1 and solve the problem. Search through the remaining boxes for the answer you got for question 1. Now complete that question. Continue until you have completed the questions and you are back to the original question. Record your path below.

1 → _____ → _____ → _____ → _____ → _____ → _____ → _____ → _____ → _____ → 1

Previous Answer: -1 #_____	Previous Answer: -1/2 #_____
1. Simplify the logarithm without a calculator. $$\log_{1/3}(1/27)$$	2. Simplify the logarithm without a calculator. $$\log_{1/2}4$$
Previous Answer: 1/3 #_____	**Previous Answer: -3** #_____
3. Simplify the logarithm without a calculator. $$\log_9 81$$	4. Simplify the logarithm without a calculator. $$\log_{25}5$$

how to use this resource

This is a great activity to use when reviewing how to evaluate logarithms using properties, without a calculator.

It can be used right after teaching the concept or as homework.

This is also a **substitute-friendly** assignment!

Name: **Answer Key**   Date: _____

EVALUATING LOGS WITHOUT A CALCULATOR CIRCUIT

Directions: A circuit is a route that starts and ends at the same place. Start in the first box labeled 1 and solve the problem. Search through the remaining boxes for the answer you got for question 1. Now complete that question. Continue until you have completed the questions and you are back to the original question. Record your path below.

$1 \rightarrow \underline{10} \rightarrow \underline{4} \rightarrow \underline{8} \rightarrow \underline{2} \rightarrow \underline{7} \rightarrow \underline{3} \rightarrow \underline{9} \rightarrow \underline{5} \rightarrow \underline{6} \rightarrow 1$

Previous Answer: -1 # **6**	Previous Answer: -1/2 # **8**
1. Simplify the logarithm without a calculator. $\log_{1/3}(1/27)$ $\log_{1/3}\left(\frac{1}{3}\right)^3$ $\boxed{3}$	2. Simplify the logarithm without a calculator.

Previous Answer: 1/3	
3. Simplify the logarithm witho... $\log_9 81$ $\log_9 9^2$ $\boxed{2}$	

Previous Answer: 1/4	
5. Simplify the logarithm witho... $\log_{10} 1$ $\boxed{0}$	

EVALUATING LOGS WITHOUT A CALCULATOR CIRCUIT

Previous Answer: -2 # **2**	Previous Answer: 2 # **4**
7. Simplify the logarithm without a calculator. $\log_9 3$ $\log_9(9^{1/2})$ $\boxed{1/2}$	8. Simplify the logarithm without a calculator. $\log_6 6$ $\log_6 6^1$ $\boxed{1}$
Previous Answer: 3 # **3**	Previous Answer: 5 # **1**
9. Simplify the logarithm without a calculator. $\log_8 2$ $\log_8(8^{1/3})$ $\boxed{1/3}$	10. Simplify the logarithm without a calculator. $\log_3 81$ $\log_3(3^4)$ $\boxed{4}$

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hey there!

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