

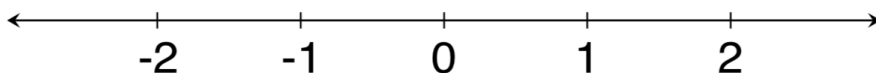
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Learning with Logarithms!

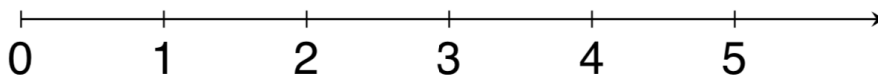
Place the following expressions on the number line. Use the space below the number line to explain how you knew where to place each expression.

1. A. $\log_3 3$ B. $\log_3 9$ C. $\log_3 \frac{1}{3}$ D. $\log_3 1$ E. $\log_3 \frac{1}{9}$



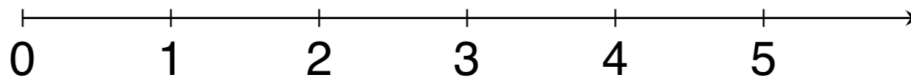
Explain: _____

2. A. $\log_3 81$ B. $\log_{10} 100$ C. $\log_8 8$ D. $\log_5 25$ E. $\log_2 32$



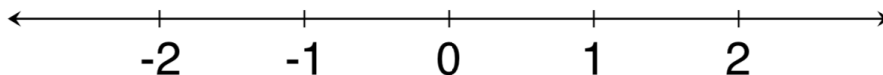
Explain: _____

3. A. $\log_7 7$ B. $\log_9 9$ C. $\log_{11} 1$ D. $\log_{10} 1$



Explain: _____

4. A. $\log_2 \left(\frac{1}{4}\right)$ B. $\log_{10} \left(\frac{1}{1000}\right)$ C. $\log_5 \left(\frac{1}{125}\right)$ D. $\log_6 \left(\frac{1}{6}\right)$

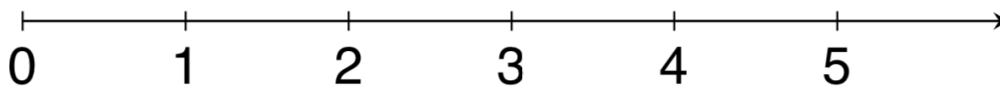


Explain: _____

Is it possible for a logarithm to equal a negative number? What would it mean for the expression?

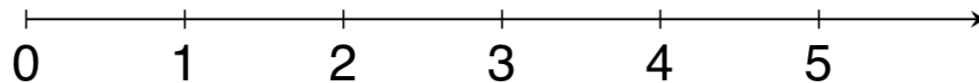
Is it possible for a logarithm to equal zero? Why or why not?

5. A. $\log_4 16$ B. $\log_2 16$ C. $\log_8 16$ D. $\log_{16} 16$



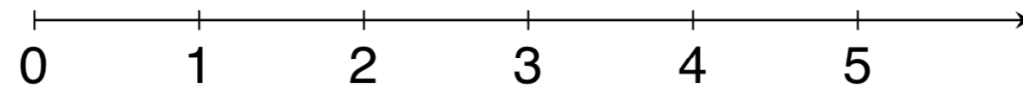
Explain: _____

6. A. $\log_2 5$ B. $\log_5 10$ C. $\log_6 1$ D. $\log_5 5$ E. $\log_{10} 5$



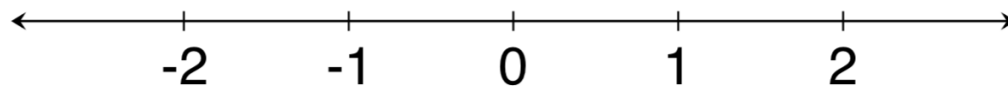
Explain: _____

7. A. $\log_{10} 50$ B. $\log_{10} 150$ C. $\log_{10} 1000$ D. $\log_{10} 500$



Explain: _____

8. A. $\log_3 3^2$ B. $\log_5 5^{-2}$ C. $\log_6 6^0$ D. $\log_4 4^{-1}$ E. $\log_2 2^3$



Explain: _____

Does $\log_x 0$ have an answer? Why or why not?

Does $\log_x x^b$ have an answer? Why or why not?