

Assignment 2.1

Write each exponential equation in logarithm form.

1.  $5^4 = 625$                       2.  $3^2 = 9$                       3.  $\left(\frac{1}{2}\right)^{-3} = 8$

4.  $4^{-2} = \frac{1}{16}$                       5.  $10^4 = 10,000$                       6.  $a^y = x$

7. Compare the exponential form to the logarithmic form, what part of the exponential equation is the answer to the logarithmic equation?

Answer each question, if yes, give an example, if no, explain why not.

8. Is it possible for a logarithm to equal a negative number?

9. Is it possible for a logarithm to equal zero?

10. Does  $\log_x 0$  have an answer?

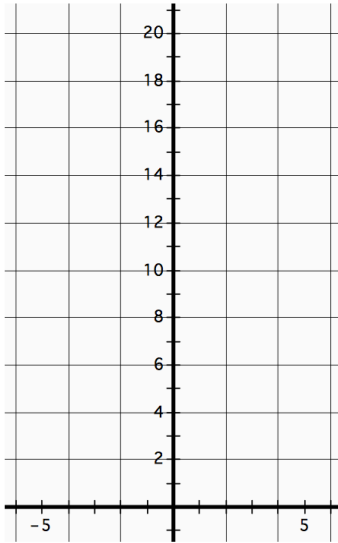
11. Does  $\log_x 1$  have an answer?

12. Does  $\log_x x^5$  have an answer?

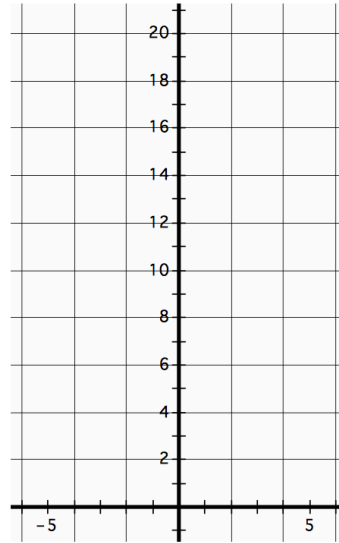
Refresh Your Memory

Graph each function over the domain of  $[-4, 4]$ .

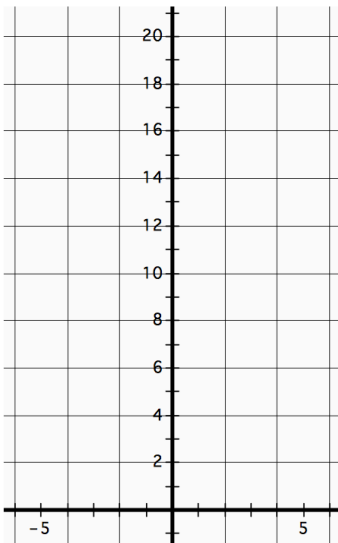
13.  $y = 2^x$



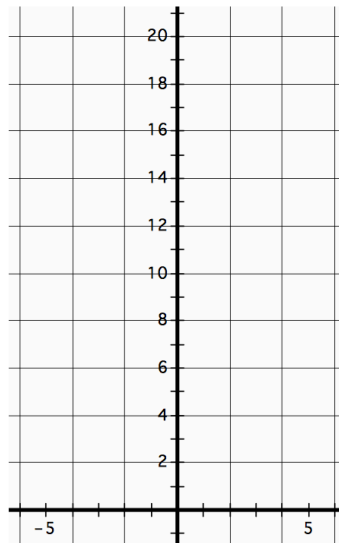
14.  $y = 2 \cdot 2^x$



15.  $y = \left(\frac{1}{2}\right)^x$



16.  $y = 2\left(\frac{1}{2}\right)^x$



Write each expression as an integer or simple fraction.

17.  $-3^{-2}$

18.  $\frac{9}{2^{-1}}$

19.  $3\left(\frac{29^3}{11^5}\right)^0$

20.  $\frac{32^{-1}}{4^{-1}}$