Algebra 2 Name_____



# Chapter 7 Test Review

Date_____ Period____

**Evaluate each expression.**

1) $\log_7 \frac{1}{343}$

2) $\log_6 1$

**Condense each expression to a single logarithm.**

3) $20\log_6 5 - 5\log_6 12$

4) $5\log_4 x + 25\log_4 y$

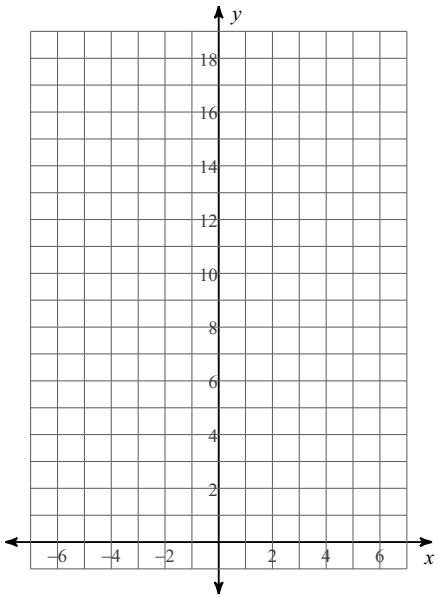
**Expand each logarithm.**

5) $\log_9 \left(a^5 b^6\right)$

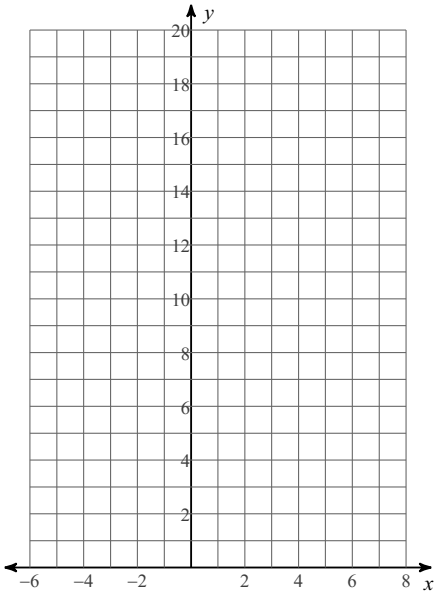
6) $\log_3 \left(x \cdot y \cdot z^6\right)$

**Sketch the graph of each function.**

7) $y = \left(\frac{1}{2}\right)^x - 1$

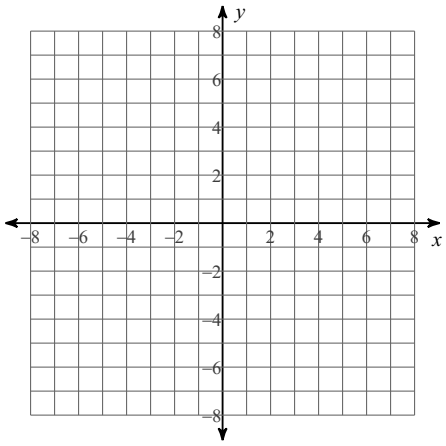



8) $y = 3^{x-1} + 1$



**Identify the domain and range of each. Then sketch the graph.**

9) $y = \log_5 (x + 4) - 4$




**Find the inverse of each function.**

10) $y = \log_3 x - 5$

**Rewrite each equation in logarithmic form.**

11) $16^2 = 256$

12) $2^y = x$

**Rewrite each equation in exponential form.**

13) $\log_{15} y = x$

14) $\log_{14} 196 = 2$

**Solve each equation. Round your answers to the nearest ten-thousandth.**

15) $16^{-2n-7} = 3$

16) $-2 \cdot 16^{7-4b} = -10$

17) $-7 \cdot 5^{2n+7} + 2 = -96$

18) $\log_4 2 + \log_4 x = 4$

19) $\log_9 x - \log_9 (x - 5) = 1$

20) $\log (6 - 4x) - \log 3 = 1$

# Answers to Chapter 7 Test Review

1) $-3$

2) $0$

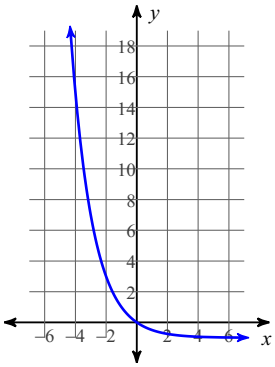
3) $\log_6 \dfrac{5^{20}}{12^5}$

4) $\log_4 \left(y^{25}x^5\right)$

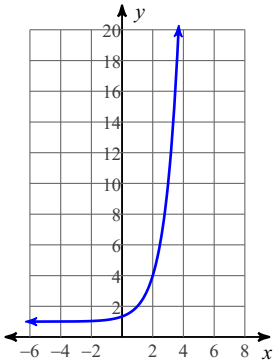
5) $5\log_9 a + 6\log_9 b$

6) $\log_3 x + \log_3 y + 6\log_3 z$

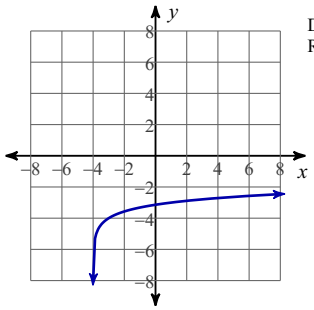
7)




8)




9)




Domain: $x > -4$
Range: All reals

10) $y = 3^{x+5}$

11) $\log_{16} 256 = 2$

12) $\log_2 x = y$

13) $15^x = y$

14) $14^2 = 196$

15) $-3.6981$

16) $1.6049$

17) $-2.6801$

18) $\{128\}$

19) $\{5.625\}$

20) $\{-6\}$