

Name _____

Algebra 2 Test Review Chapter 7

Solve each equation. Show all work.

1. $3^x - 12 = 15$

2. $\log 5x + 3 \log 2 = 2$

Describe how the graph of each function is related to the graph of its parent function.

3. $y = -5^{x-3}$

4. $y = 2 \log x + 7$

Evaluate each logarithm.

5. $\log_5 125$

6. $\log_{\frac{1}{3}} 81$

Write the equation in logarithmic form.

Write the equation in exponential form.

7. $5^{-3} = \frac{1}{125}$

8. $\ln 1 = 0$

Write each logarithmic expression as a single logarithm.

9. $\ln 72x - 2 \ln 2y$

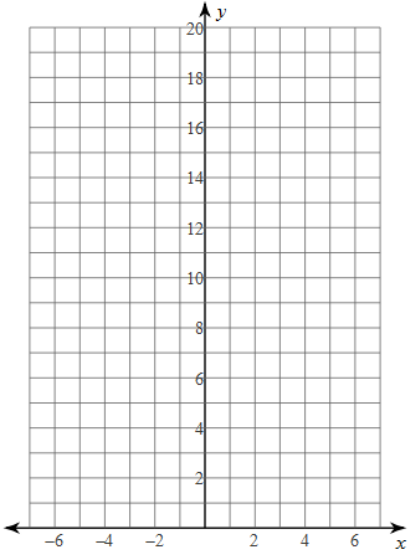
Use the Change of Base Formula to rewrite the expression.

10. $\log_{26} 111$

Name _____

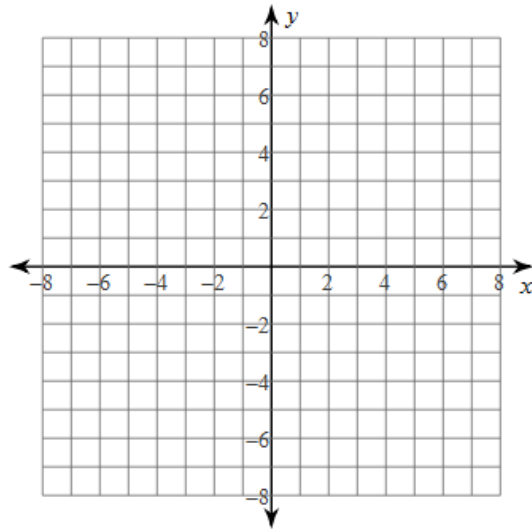
Graph each function. Identify the domain, range, and asymptote.

$$y = 4 \cdot 2^x$$



11.

$$y = \log x$$



12.

Solve.

13. $3^{7x} + 9.8 = 55$

147. $\log_2(x + 8) = 4$

15. The population of a bee colony is growing at a rate of 3.7% each year. There are currently 3400 bees in the colony. At this rate, in how many years will there be 10,200 bees in the colony?
16. Continuously compounded interest is represented by the formula $A = Pe^{rt}$. Let A be the final amount, P be the starting principal, r be the continuous interest rate, and t be the time in years. If \$1000 compounded continuously is worth \$1066 in 5 years, what is the interest rate?
- A. 1.28%
 - B. 0.05%
 - C. 5%
 - D. 25%
17. In 1985, Mexico was hit by an earthquake with a magnitude of 8.3 on the Richter scale. Eight years later, India was hit by an earthquake with a magnitude of 6.7. How many times more intense was the earthquake in Mexico than the earthquake in India? Use the formula $\log \frac{I_1}{I_2} = M_1 - M_2$.