

Chapter 7 Practice Test

Write the letter for the correct answer in the blank at the right of each question.

1. Find the domain and range of the function $y = -4\left(\frac{3}{4}\right)^x$

D: all real #
R: $y < 0$

2. Create two exponential equations, where one function represents exponential *growth* while the other equation represent exponential *decay*.

3. Use the equation of the exponential function whose graph passes through the points (0, 4) and (1, 24) to find the value of y when $x = -2$.

$y = a \cdot b^x$
 $y = a$

$24 = 4 \cdot b^1$
 $b = 6$

$y = 4 \cdot 6^x$
 $y = 4 \cdot (6)^{-2}$
 $y = \frac{4}{6^2}$
 $y = \frac{4}{36} = \frac{1}{9}$

1. $y = 2 \cdot 3^x$
 2. $y = 2 \cdot \left(\frac{1}{3}\right)^x$
 Growth →
 decay →
 $y = \frac{1}{a}$

7. Write the equation $2401^{\frac{1}{4}} = 7$ in logarithmic form.

8. Evaluate $6^{\log_6 45}$.

9. Solve $\log_{\frac{1}{6}} x = -2$.

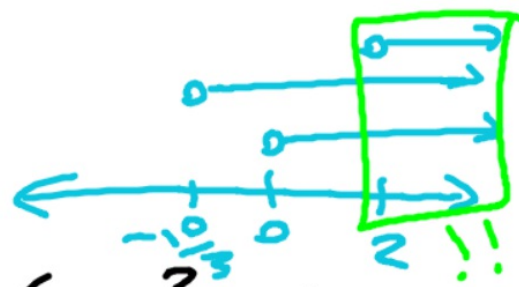
10. $\log_5(8x) \geq \log_5(3x + 10)$.

$$\begin{array}{l} 8x > 0 \\ x > 0 \end{array} \left(\begin{array}{l} 3x + 10 > 0 \\ x > \frac{-10}{3} \end{array} \right)$$

$$\begin{array}{l} 8x > 3x + 10 \\ 5x > 10 \\ x > 2 \end{array}$$

$$\left(\frac{1}{6}\right)^{-2} = x$$

$$6^2 = x$$



- _____
- 6. _____
- 7. _____
- 8. 45
- 9. x = 36
- 10. x > 2

NAME _____

DATE _____

PERIOD _____

Chapter 7 Practice Test *(continued)*

11. Use $\log_5 2 \approx 0.4307$ and $\log_5 3 \approx 0.6826$ to approximate the value of $\log_5 48$

$$\log_5 2^4 \cdot 3 = \log_5 2^4 + \log_5 3$$

$$= 4(\log_5 2) + \log_5 3$$

$$= 4(.4307) + (.6826)$$

$$= \underline{1.7228} + \underline{.6826}$$

$$48 = 2^4 \cdot 3$$
$$4 \cdot 12$$
$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$$
$$\underline{2.4054}$$