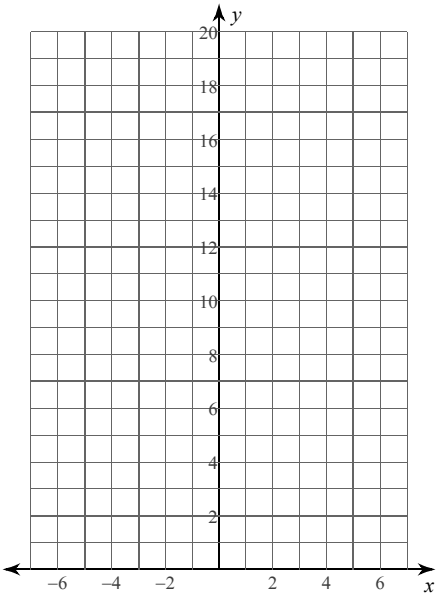
Chapter 4 Exam Study Guide

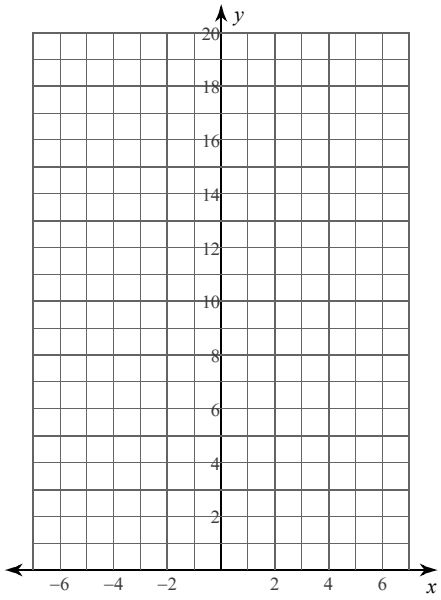
Date_____ Period____

Sketch the graph of each function. Identify Whether it is exponential growth or decay.

1) $y = 5 \cdot 2^x$



2) $y = 4 \cdot \left(\frac{1}{2}\right)^x$



Find the inverse of each function.

3) $y = 5^x + 7$

4) $y = \log_4 (x + 8)$

Solve each equation.

5) $81^{2-a} = 243$

Use a calculator to approximate each to the nearest thousandth.

6) $\log_2 48$

7) $\log_6 37$

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

8) $10^{-8v} + 10 = 36$

9) $-7e^{-5x} = -91$

10) $-18^{n-7} = -92$

Condense each expression to a single logarithm.

11) $\log_4 5 + \frac{\log_4 12}{3} + \frac{\log_4 11}{3}$

Expand each logarithm.

12) $\log_3 \left(z^4\sqrt{x}\right)$

Solve each equation.

13) $\log_{15} n = \log_{15} (5n - 3)$

14) $\log_4 2 + \log_4 (x - 5) = 1$

Evaluate each expression.

15) $\log_7 1$

16) $\log_4 16$

Rewrite each equation in exponential form.

17) $\log_3 \frac{1}{243} = -5$

Rewrite each equation in logarithmic form.

18) $8^0 = 1$

Write the equation of an exponential function which passes through the given points.

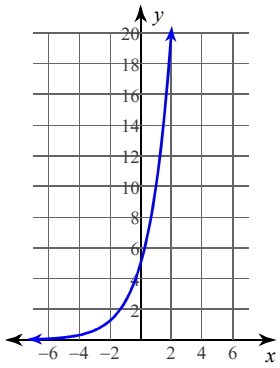
19) through: $(2, 24)$ and $(3, 144)$

Write the equation of a powerl function which passes through the given points.

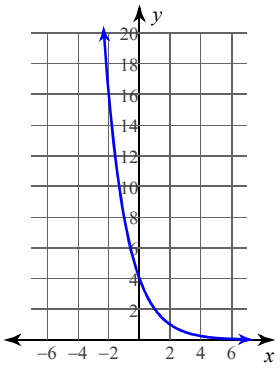
20) through: $(5, 9)$ and $(8, 34)$

Answers to Chapter 4 Exam Study Guide (ID: 1)

1)



2)



3) $y = \log_5 (x - 7)$

4) $y = 4^x - 8$

5) $\left\{\frac{3}{4}\right\}$

6) 5.585

7) 2.015

8) −0.1769

9) −0.513

10) 8.5644

11) $\log_4 \left(5\sqrt[3]{132}\right)$

12) $4\log_3 z + \frac{\log_3 x}{2}$

13) $\left\{\frac{3}{4}\right\}$

14) $\{7\}$

15) 0

16) 2

17) $3^{-5} = \frac{1}{243}$

18) $\log_8 1 = 0$

19) $y = -\frac{6}{5}x - 5$

20) $y = \frac{4}{9}x + \frac{7}{9}$