

1. Write the equation of the inverse relation.

a) $y = \frac{(2x+1)^3}{6} - 7$

b) $y = 7 \cdot \sqrt{\frac{3-5x}{2}} + 8$

2. Is the inverse of each a function? You can use a graphing calculator to help decide.

a) $y = (x+3)^2 - 1$

b) $y = 2x + 6$

3. Does each exponential equation represent Growth or Decay? *(No Graphing Calc Allowed)*

a) $y = 450(\frac{13}{12})^x$

b) $y = 0.57(0.59)^{-x}$

c) $y = 18(1.0003)^x$

d) $y = 9580(0.998)^x$

4. Use each percent change (increase or decrease) to find the base b of an exponential function.

a) 1.85% increase

b) 38% decrease

c) 0.43% decrease

d) 95% increase

5. Give the percent change (state if it's an increase or decrease) that each exponential equation models.

a) $y = 1300(0.95)^x$

b) $y = 2(1.0075)^x$

6. The population of a city was growing 3.8% each year throughout the late 1800's into the early 1900's. In 1900 the population was 9,250. a) Find the population at the start of World War I in 1914.

b) Find the population in 1895.

7. The value of a house in 2005 was \$139,000. The value of the house has been declining 5.25% each year.

a) Find the value of the house in 2000.

b) Find the value of the house in 2011.

8. Rewrite each exponential equation as a logarithm.

a) $7^x = 343$

b) $10^5 = x$

c) $x^7 = 1200$

9. Rewrite each logarithmic equation as an exponential.

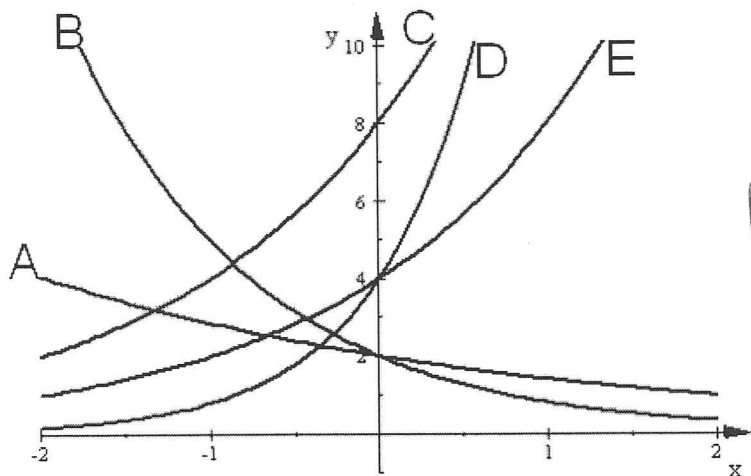
a) $\log_3 x = 4$

b) $\log_x 25 = 2$

c) $\log 400 = x$

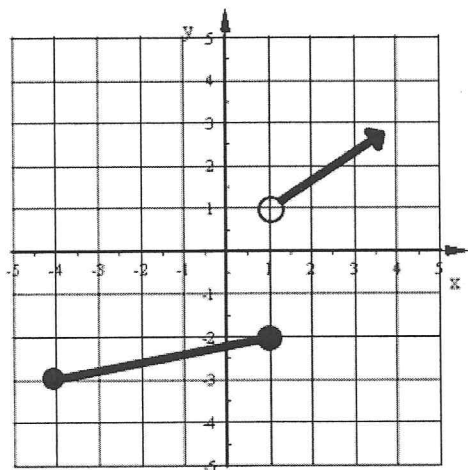
10. Match each graph with the correct equation below.

____ $y = 8(2)^x$ ____ $y = 2(0.4)^x$ ____ $y = 4(2)^x$ ____ $y = 2(0.7)^x$ ____ $y = 4(5)^x$



(No graphing calc allowed)

11. Find the domain and range of the inverse of this function.



1. a) $f^{-1} = \frac{\sqrt[3]{6(x+7)} - 1}{2}$

b) $f^{-1} = \frac{2((\frac{x}{7})^2 - 8) - 3}{-5}$

2. a) No b) Yes

3. a) Growth b) Growth c) Growth d) Decay

4. a) $b = 1.0185$

b) $b = 0.62$

c) $b = .9957$

d) $b = 1.95$

5. a) 5% decrease

b) 0.75% increase

6. $y = 9250(1.038)^x$

a) $9250(1.038)^{14} = 15592$

b) $9250(1.038)^{-5} = 7676$

7. $y = 139,000(.9475)^x$

a) $139,000(.9475)^{-5} = \$182,019.83$

b) $139,000(.9475)^6 = \$100,575.02$

8. a) $\log_7 343 = x$

b) $\log x = 5$

c) $\log_x 1200 = 7$

9. a) $3^4 = x$

b) $x^2 = 25$

c) $10^x = 400$

10. C $y = 8(2)^x$

B $y = 2(0.4)^x$

E $y = 4(2)^x$

A $y = 2(0.7)^x$

D $y = 4(5)^x$

11. Domain of $f^{-1}(x)$: $-3 \leq x \leq -2$ and $x > 1$ Range of $f^{-1}(x)$: $y \geq -4$