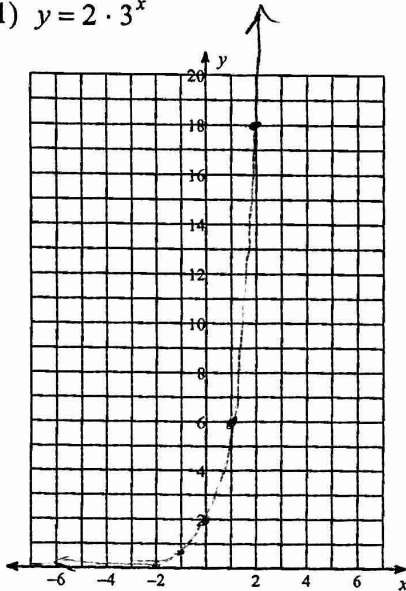


Quizzilla 2 (The Rebirth) Review

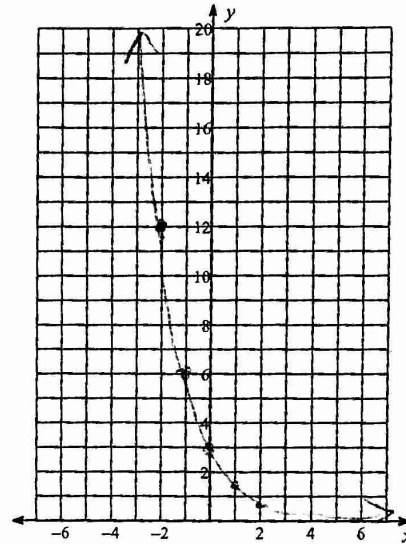
Sketch the graph of each function.

1) $y = 2 \cdot 3^x$



| x | y |
|----|---------------|
| -2 | $\frac{2}{9}$ |
| -1 | $\frac{2}{3}$ |
| 0 | 2 |
| 1 | 6 |
| 2 | 18 |

2) $y = 3 \cdot \left(\frac{1}{2}\right)^x$



| x | y |
|----|----------------|
| -2 | 12 |
| -1 | 6 |
| 0 | 3 |
| 1 | $1\frac{1}{2}$ |
| 2 | $\frac{3}{4}$ |

Rewrite each equation in exponential form.

3) $\log_{289} 17 = \frac{1}{2}$

$289^{1/2} = 17$

4) $\log_{15} 225 = 2$

$15^2 = 225$

Rewrite each equation in logarithmic form.

5) $5^{-2} = \frac{1}{25}$

$\log_5 \frac{1}{25} = -2$

6) $64^{1/2} = 8$

$\log_{64} 8 = \frac{1}{2}$

Expand each logarithm.

7) $\log_4 \sqrt{12}$

$\frac{1}{2} \log_4 12$

8) $\log_6 (8 \cdot 11^6)^5$

$5 \log_6 8 + 30 \log_6 11$

Condense each expression to a single logarithm.

9) $6 \log_4 5$

$\log_4 5^6$

10) $3 \log_3 6 - 5 \log_3 7$

$\log_3 \frac{6^3}{7^5}$

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

11) $14^r = 1$

0

12) $11^x = 87$

1.8624

13) $\log_2 x = 7$

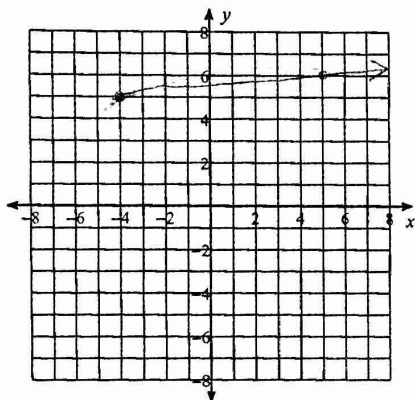
128

14) $\log_{12} x = 2$

144

Sketch the graph of each function.

15) $y = \log(x + 5) + 5$



| x | y |
|----|---|
| -4 | 5 |
| 5 | 6 |

Solve the following Exponential Growth and Decay problems.

16) Use $y = ae^{kt}$

A bank account is started with a \$1000 deposit and the interest rate is 3% compounded continuously. How much money will be in the account after 6 months?

\$1197.22

17) A population of 800 beetles is growing each month at a rate of 5%.

Use $y = a(1+r)^t$

a) Write an equation that expresses the number of beetles at time x.

$$y = 800(1 + 0.05)^x$$

b) About how many beetles will there be in 8 months?

about 1182 beetles