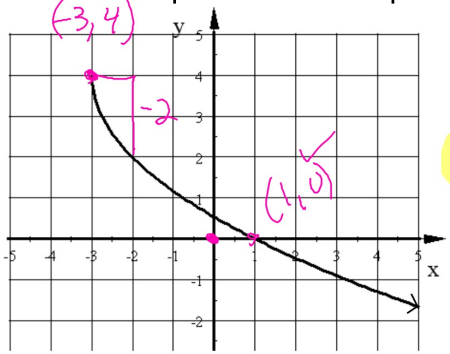
Bellwork Algebra 2 Thursday, May 29, 2014

1. Write the equation of this square root function.



$y = a\sqrt{x-h}+k$

$y = -2\sqrt{x+3}+4$

2. The population of a city in 1992 was 15,700.
The population has been increasing 1.8% each year.

$y = a \cdot b^x$

$y = 15{,}700(1.018)^x$

100% + 1.8%
101.8%

a) Find the population in 1985.

$x = -7$

$y = 13{,}857$

b) Find the population in 2010.

$x = 18$

$y = 21{,}645$

3. The half-life of a medicine is 20 minutes. You took a 300ml dose at 10:00 am.

How much remains in your system at 1:30 pm the same day. roudn to the nearest hundredth.

$y = 300(.5)^x$

$300(.5)^{10.5} = .21\text{ ml}$

10:00 am → 1:30 pm
3.5 hrs
$\frac{210\text{ min}}{20\text{ min}} = 10.5$

Solve each equation to the nearest hundredth.

4. $5(6)^{x+3} - 7 = 29$

$\frac{5(6)^{x+3}}{5} = \frac{36}{5}$

$6^{x+3} = 7.2$

$\log_6 7.2 = x+3$

$\log_6 7.2 = \frac{\log 7.2}{\log 6}$

$x = -1.90$

5. $\log_5 x - \log_5(x - 4) = 3$

$\log_5 \frac{x}{x-4} = 3$

$5^3 = \frac{x}{x-4}$

$\frac{125}{1} = \frac{x}{x-4}$

$x = 125(x-4)$

$x = 125x - 500$

$500 = 124x$

$x = 4.03$

6. Write the equation of this periodic function.