Applications

1. Liz deposited $1000 in an account that earns 5.5% annually. How long will it take for her to have $1306.96?

2. If car cost $22,000 when it was new and it loses 9.6% of its value each year, in how many years will be it be worth $5,000?

3. Suppose you invest $5000 in a savings account. How long will it take to double your money at 4.3% compounded annually?

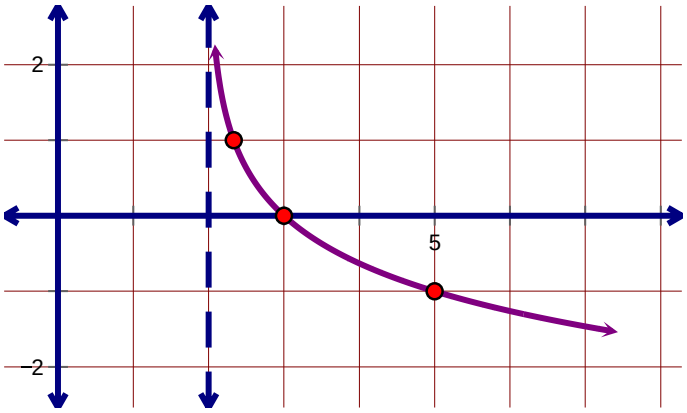
4. Carly got a gold coin as a graduation gift from her grandfather in 1966, worth $1300. If gold has been increasing by 2.8% each year and the coin is now worth $2500, what year did she graduate?

5. A certain type of radioactive material decays at a rate of 28.4% each week. How long will it take to lose 90% of the material?

Graphing

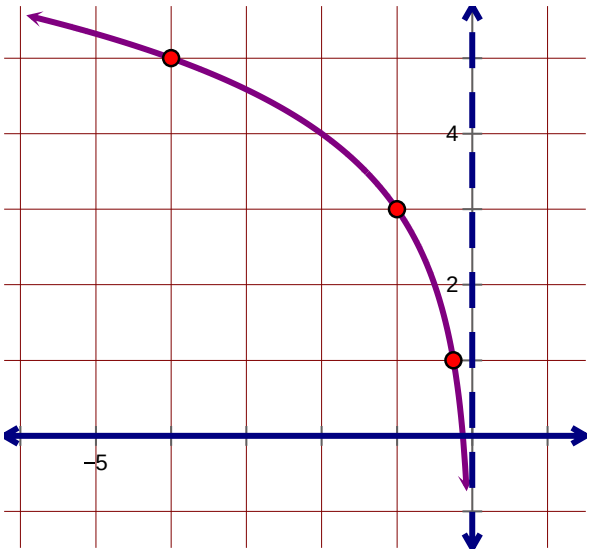
1. Sketch a complete graph of $a(x)=3\log_2 x$

2. Find the equation of the function with base 3.



3. Sketch a complete graph of $c(x)=-\log(x+4)-1$

4. Find the equation of the function with base 4.



5. Sketch a complete graph of $f(x)=\frac{1}{2}\log_2\left(-(x-5)\right)+2$

Expand/Single Log

1. $2\log x - \log y$

2. $\log_5\left(\frac{8v^3}{w}\right)$

3. $\frac{1}{2}\log_3 d + 4\log_3 m^3 - \log_3 m^2$

4. $\log_8\left(\frac{r^7 c^{-5}\sqrt[4]{n}}{\sqrt{h}}\right)$

5. $-\frac{3}{2}\log k^4 + 5\log b - \frac{4}{7}\log a^{14}$

Solve

1. (No calc!) $\log_3(x+1)=2$

2. (No calc!) $4\log_3 x=20$

3. (No calc!) $\log_5 x-\log_5(x-1)=2$

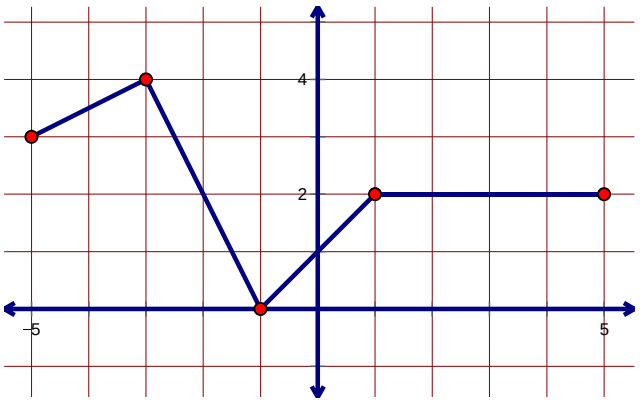
4. (With calc!) $\frac{2}{3}(12)^x=10$

5. (No calc!) $\log_2(x-14)+\log_2 x=5$

Inverse

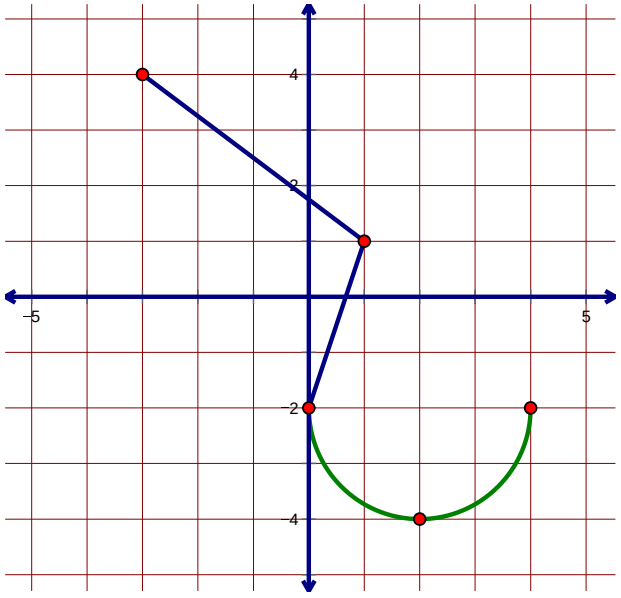
1. Find the inverse of $a(x)=\frac{x}{5}-2$

2. Sketch a graph of the inverse.



3. If $g(x)=2x+7$, find $g^{-1}(13)$

4. Sketch a graph of the inverse.



5. If $h(x)=\frac{6}{x-4}-8$, find $h^{-1}(-12)$