

1. Determine whether each function represents exponential growth or exponential decay. Find the percentage of increase/decrease.

$$y = 0.5 \left(\frac{3}{2}\right)^x$$

$$y = 8 \cdot (0.01)^x$$

2. Write an exponential function to model each situation. Find the value after 6 years.

The population of Morintown (425 people) is increasing at an annual rate of 8%.

A \$25,000 car depreciates 13% each year.

3. Morinium-10 has a half-life of 580 years. Write the decay function for a 60 mg sample. Find the amount of Morinium-10 remaining after 220 years.

4. Write an exponential equation $y = ab^x$ whose graph passes through the given points.

(1, 1) and (0, 3)

5. Use the continuously compounded interest formula $A = Pe^{rt}$ to find the amount using the given conditions.

principal: \$8000

annual interest rate: 4.6%

time: 4 years

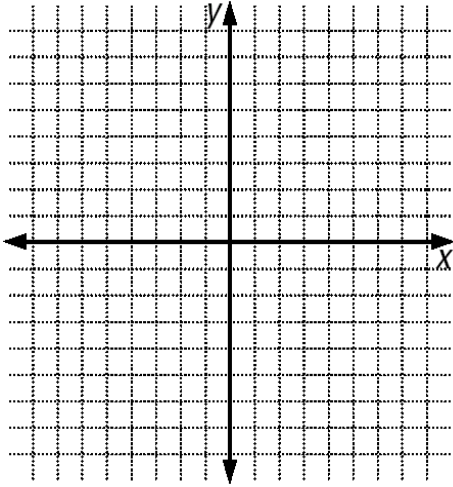
6. Iodine-123 is used in thyroid scans. Iodine-123 has a half-life of 11 hours.

a) Write the exponential decay function ($y = ab^x$) for an 80-mg sample.

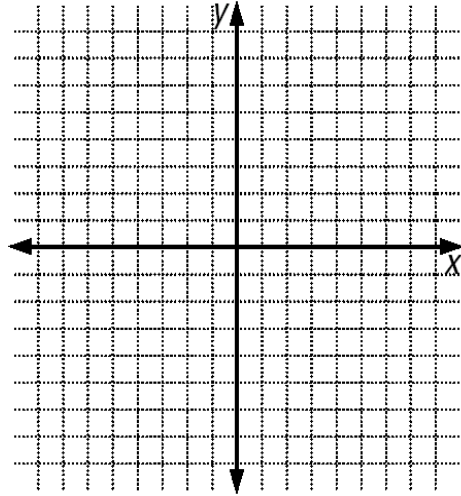
b) Use your model to find the amount of Iodine-123 remaining after 29 hours.

Graph each exponential function. Label three points and the asymptote. State the domain and range.

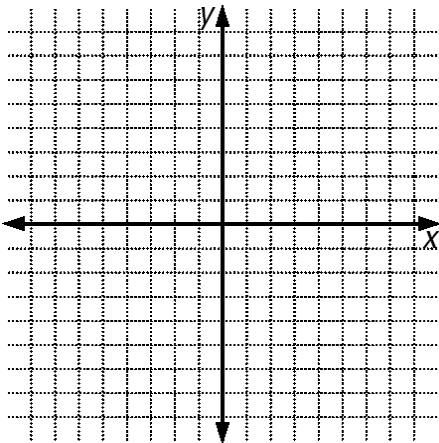
7. $y = -2 \cdot 3^x$



8. $y = 3^x - 4$



9. $y = 5^{x+1} - 2$



10. $y = 2 \left(\frac{1}{2}\right)^{x-2}$

