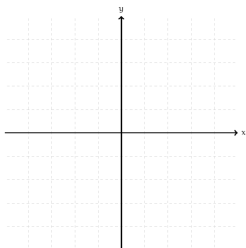


Advanced Algebra with Trig , Glawe
7.2 Graph Exponential Decay Functions Notes

Name: _____ P: _____

If _____ and _____, then the function _____ is an *exponential decay function*, and _____ is called the decay factor.

The function _____, where _____, is the *parent function* for the family of exponential decay functions with base b .

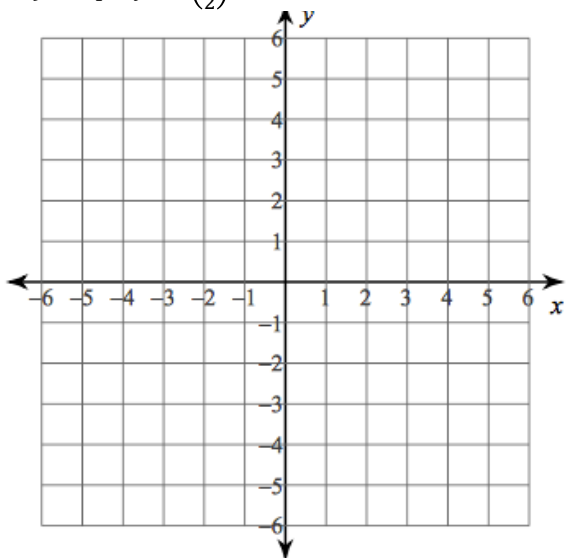


Domain: _____

Range: _____

Asymptote: _____

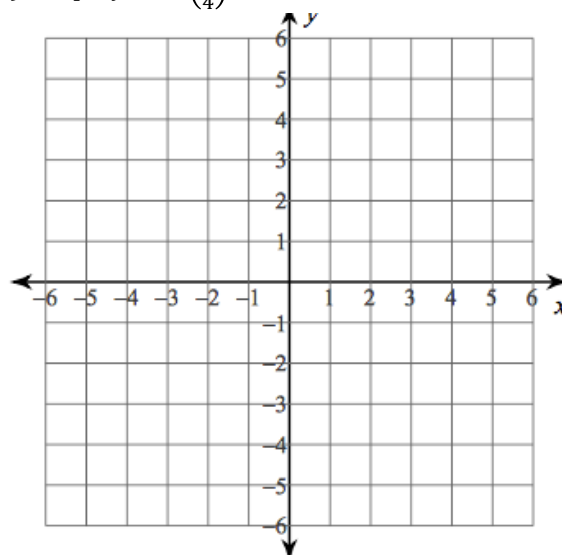
1) Graph $y = \left(\frac{1}{2}\right)^x$



Domain: _____ Range: _____

Asymptote: _____

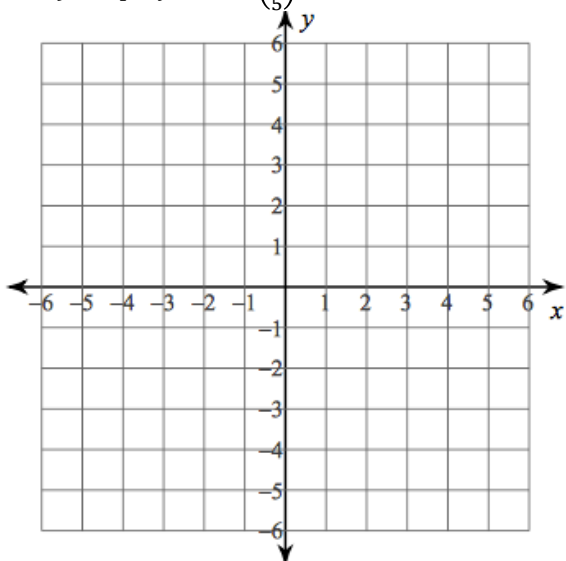
2) Graph $y = 2\left(\frac{1}{4}\right)^x$



Domain: _____ Range: _____

Asymptote: _____

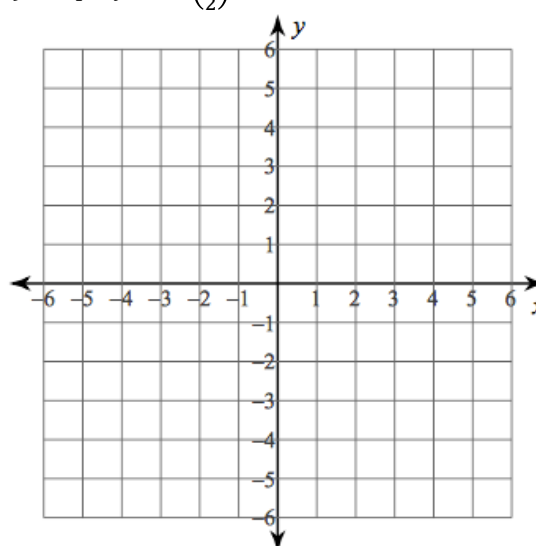
3) Graph $y = -3\left(\frac{2}{5}\right)^x$



Domain: _____ Range: _____

Asymptote: _____

4) Graph $y = 3\left(\frac{1}{2}\right)^{x+1} - 2$



Domain: _____ Range: _____

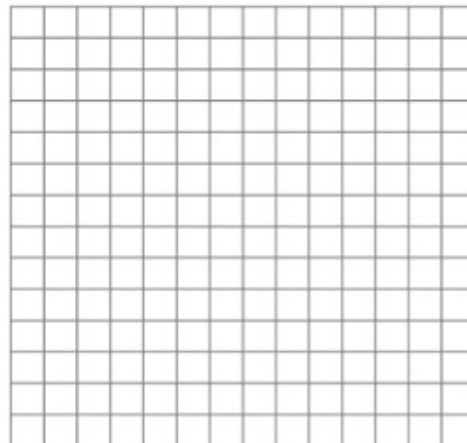
Asymptote: _____

- 5) A new snowmobile costs \$4200. The value of the snowmobile decreases by 10% each year.
- Write an exponential decay model giving the snowmobile's value y (in dollars) after t years.

b) What is the value after 3 years?

c) Graph the model.

d) Use the graph/table to estimate when the value of the snowmobile will be \$2500.



- 6) The value of a car can be modeled by the equation $y = 24,000(0.845)^t$ where t is the number of years since the car was purchased.

a) Graph the model.

b) Estimate when the value of the car will be \$10,000.

c) Use the model to predict the value of the car after 50 years. Is this a reasonable value? *Explain.*

