Lesson 7.2 Worksheet

Name: _____

Tell whether the function represents *exponential growth* or *exponential decay*.

1.) $f(x) = \frac{5}{3}\left(\frac{4}{5}\right)^x$

2.) $f(x) = \frac{3}{5}\left(\frac{5}{4}\right)^x$

3.) $f(x) = 5(2)^{-x}$

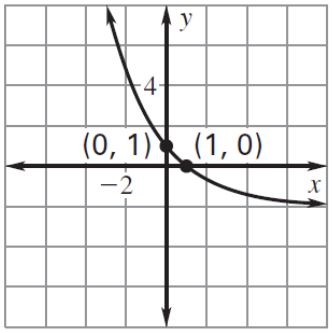
Match the function with its graph.

4.) $f(x) = \left(\frac{2}{3}\right)^{x+2}$

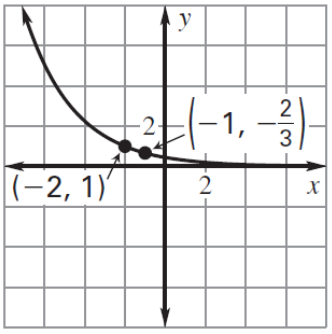
5.) $f(x) = -\left(\frac{1}{2}\right)^x + 3$

6.) $f(x) = 2\left(\frac{2}{3}\right)^{x-1} - 2$

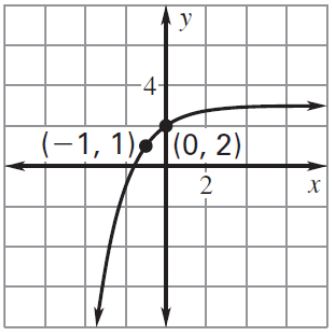
A.



B.

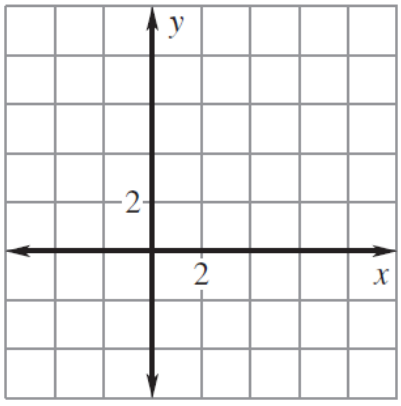


C.



Graph the function. Then state the domain and range.

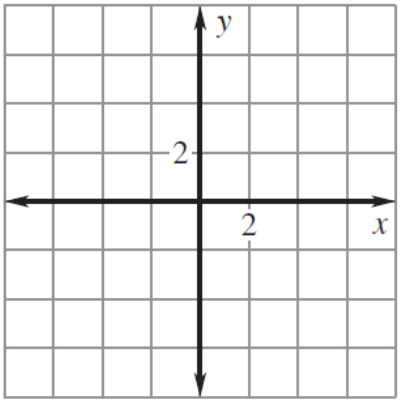
7.) $f(x) = \left(\frac{1}{3}\right)^{x+1} + 2$



domain: _____

range: _____

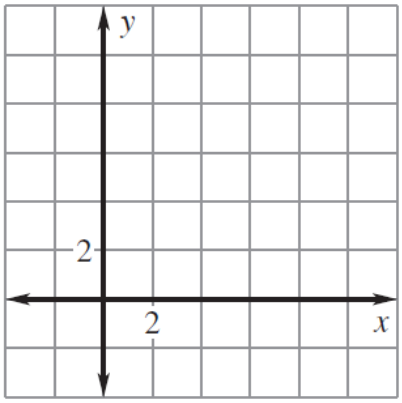
8.) $f(x) = \left(\frac{1}{2}\right)^x - 3$



domain: _____

range: _____

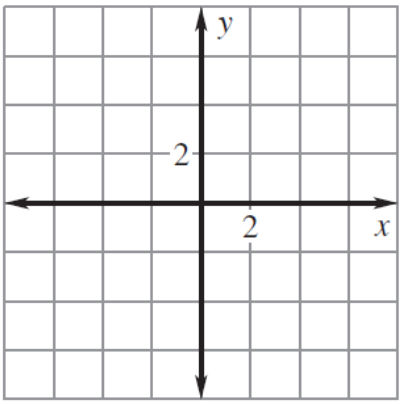
9.) $f(x) = 3\left(\frac{1}{4}\right)^{x-2} + 1$



domain: _____

range: _____

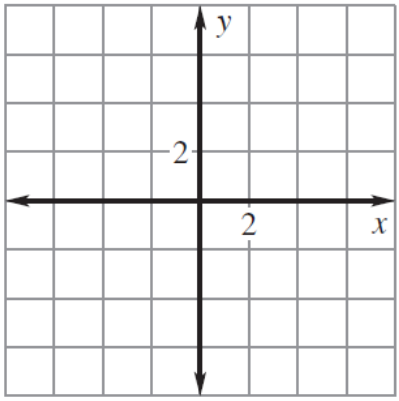
10.) $f(x) = -\left(\frac{2}{3}\right)^{x} + 3$



domain: _____

range: _____

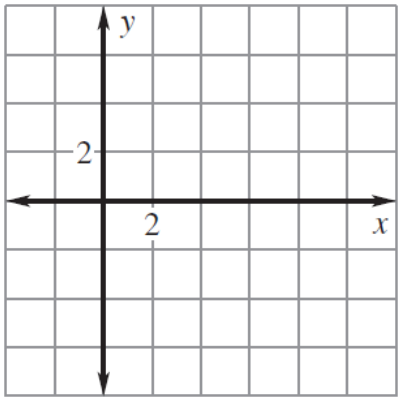
11.) $f(x) = 4\left(\frac{3}{4}\right)^{x+1} - 5$



domain: _____

range: _____

12.) $f(x) = -2\left(\frac{1}{6}\right)^{x-4} + 6$



domain: _____

range: _____

In Exercises 13-15, use the following information.

You buy a car for $22,500. The value of the car decreases by 25% each year.

13.) Write an exponential decay <u>model</u> giving the car's value *V* (in dollars) after *t* years.

14.) What is the value of the car after three years?

15.) In approximately how many years is the car worth $5300?