

Algebra 1
Unit 3 – Quiz Review

Name: _____

Given the parent function $f(x) = 3^x$, identify the transformations that have occurred for each of the following functions.

1) $g(x) = -2 \cdot 3^x - 5$

2) $g(x) = \frac{2}{3}(3)^{x-1}$

3) $g(x) = 2 \cdot 3^{(x+5)} + 7$

4) $g(x) = -\frac{1}{2} \cdot 3^{(x-4)} - 2$

For each function below, determine whether it is an example of exponential growth or exponential decay. Also name the asymptote and y-intercept.

5) $f(x) = \frac{1}{2} \cdot \frac{3^{x-2}}{2}$

6) $f(x) = \frac{3}{2} \cdot \frac{1^x}{2} + 4$

exponential growth or exponential decay

exponential growth or exponential decay

asymptote: _____

asymptote: _____

y-intercept: _____

y-intercept: _____

7) $f(x) = -2 \cdot 3^{x+1} - 5$

8) $f(x) = 4^x + 1$

exponential growth or exponential decay

exponential growth or exponential decay

asymptote: _____

asymptote: _____

y-intercept: _____

y-intercept: _____

9) $f(x) = -3^{(x+3)} - 2$

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

exponential growth or exponential decay

exponential growth or exponential decay

asymptote: _____

asymptote: _____

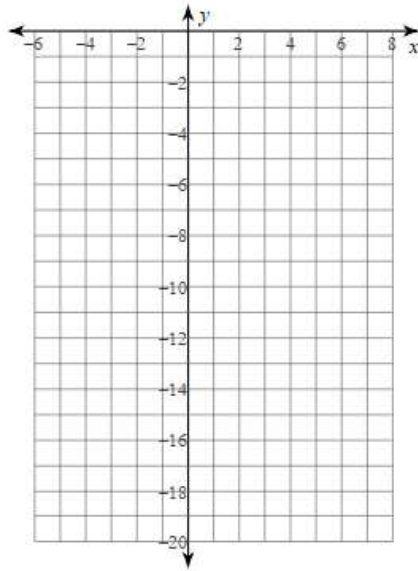
y-intercept: _____

y-intercept: _____

Graph the following exponential functions.

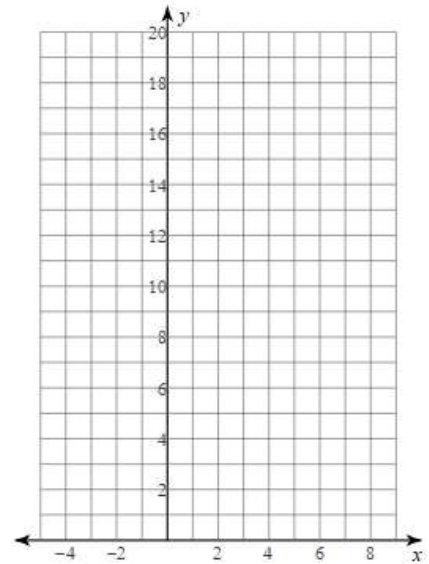
11) $y = -3\left(\frac{1}{2}\right)^{x-1} - 1$

x	y



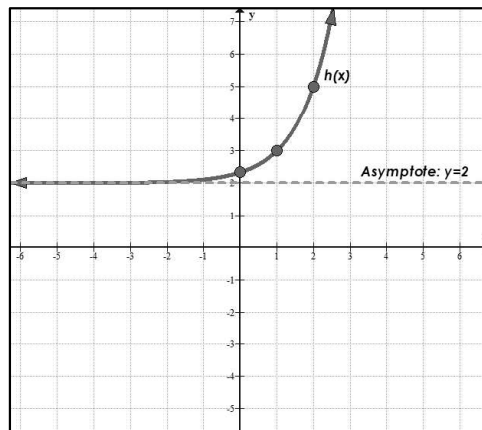
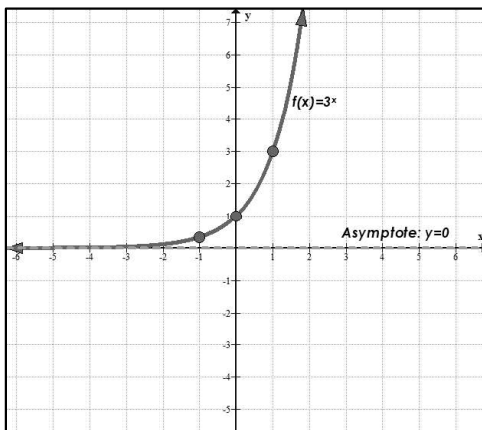
12) $y = 3^{x-2} + 1$

x	y



Identify the transformations that have occurred from the graph of the parent function to the graph of the new transformed function. Then, write the equation.

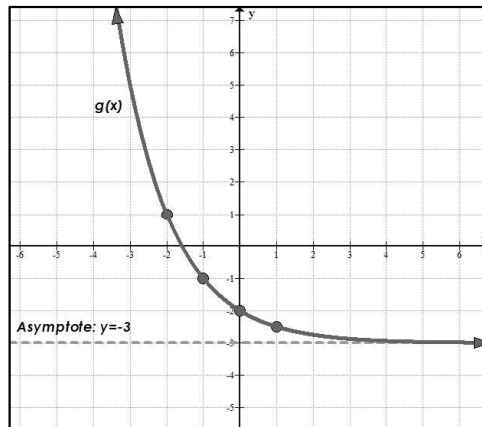
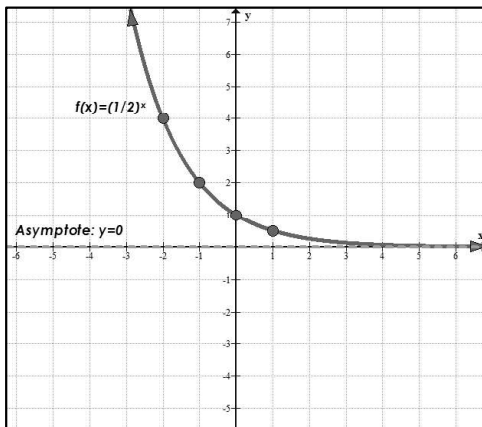
13)



Transformations:

New Equation:

14)

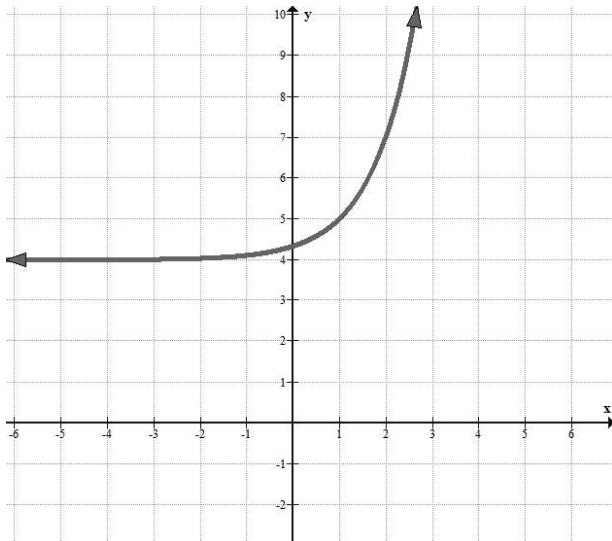


Transformations:

New Equation:

Identify the characteristics of the following exponential functions.

15)



Domain: _____

Range: _____

Asymptote: _____

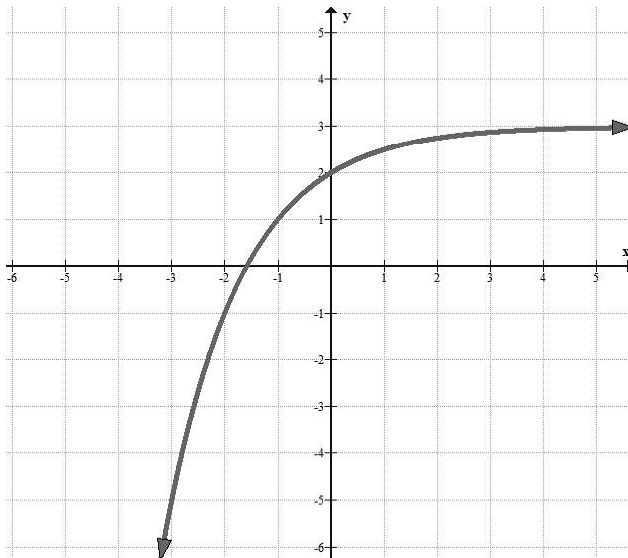
As $x \rightarrow -\infty, f(x) \rightarrow$ _____

As $x \rightarrow \infty, f(x) \rightarrow$ _____

Interval of Increase: _____

Interval of Decrease: _____

16)



Domain: _____

Range: _____

Asymptote: _____

Y-Intercept: _____

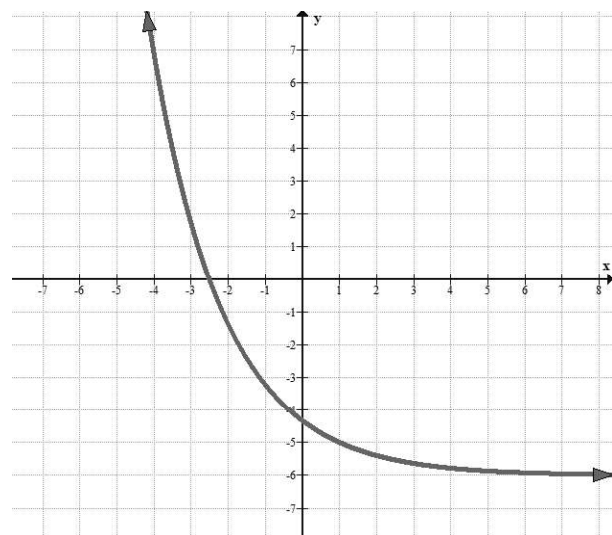
As $x \rightarrow -\infty, f(x) \rightarrow$ _____

As $x \rightarrow \infty, f(x) \rightarrow$ _____

Interval of Increase: _____

Interval of Decrease: _____

17)



Domain: _____

Range: _____

Asymptote: _____

Y-Intercept: _____

As $x \rightarrow -\infty, f(x) \rightarrow$ _____

As $x \rightarrow \infty, f(x) \rightarrow$ _____

Interval of Increase: _____

Interval of Decrease: _____