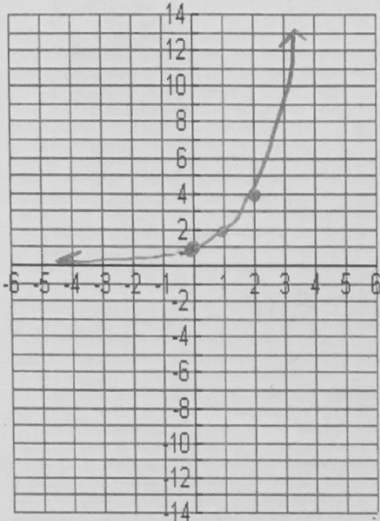


# EXPONENTIAL FUNCTIONS EXPONENTIAL GROWTH

Name Key

Period \_\_\_\_\_ Date \_\_\_\_\_

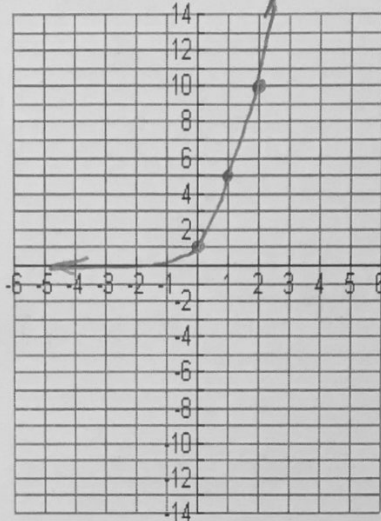
1.  $y = (2)^x$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow 0$   
 $x \rightarrow \infty, y \rightarrow \infty$

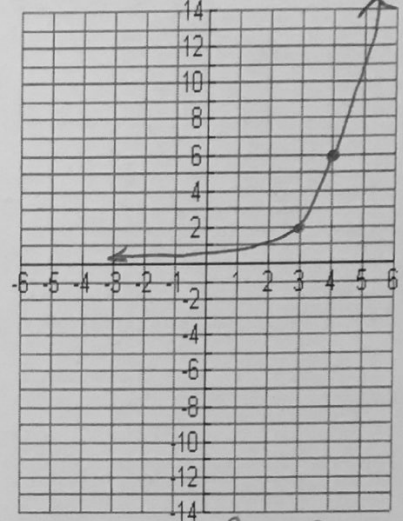
2.  $f(x) = (5)^x$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow 0$   
 $x \rightarrow \infty, y \rightarrow \infty$

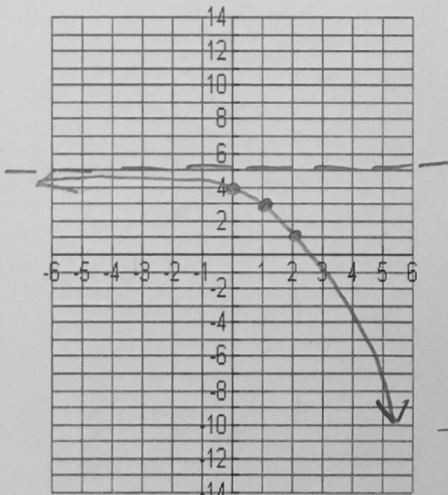
3.  $y = 2(3)^{x-3}$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow 0$   
 $x \rightarrow \infty, y \rightarrow \infty$

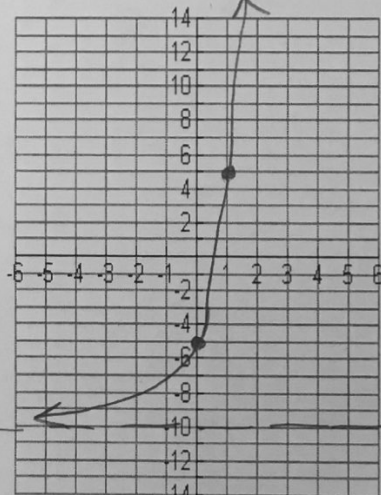
4.  $y = -(2)^x + 5$



Domain:  $(-\infty, \infty)$   
Range:  $(-\infty, 5)$   
Asymptote:  $y = 5$

$x \rightarrow -\infty, y \rightarrow 5$   
 $x \rightarrow \infty, y \rightarrow -\infty$

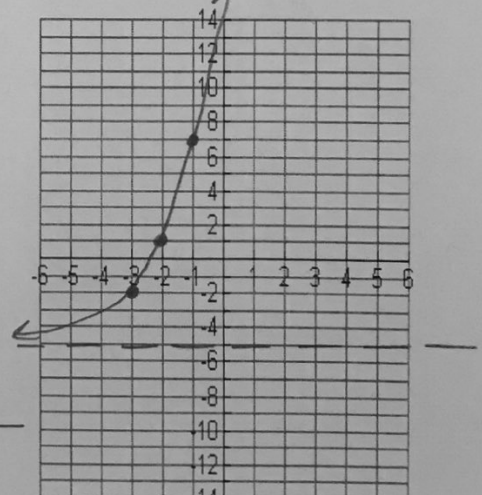
5.  $f(x) = 5(3)^x - 10$



Domain:  $(-\infty, \infty)$   
Range:  $(-10, \infty)$   
Asymptote:  $y = -10$

$x \rightarrow -\infty, y \rightarrow -10$   
 $x \rightarrow \infty, y \rightarrow \infty$

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



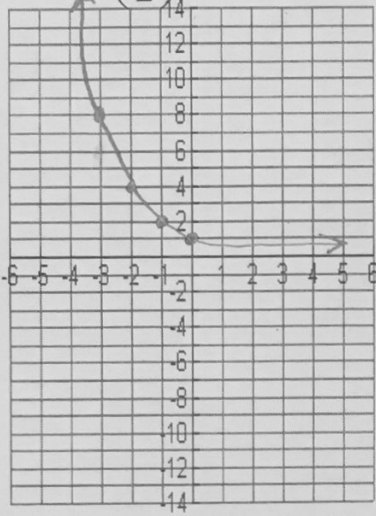
Domain:  $(-\infty, \infty)$   
Range:  $(-5, \infty)$   
Asymptote:  $y = -5$

$x \rightarrow \infty, y \rightarrow -5$   
 $x \rightarrow -\infty, y \rightarrow \infty$

# EXPONENTIAL FUNCTIONS EXPONENTIAL DECAY

Name Key  
Period \_\_\_\_\_ Date \_\_\_\_\_

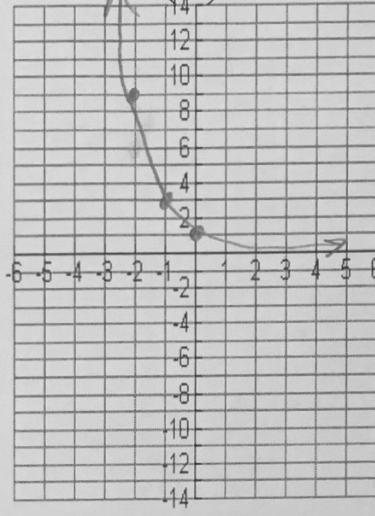
1.  $y = \left(\frac{1}{2}\right)^x$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow \infty$   
 $x \rightarrow \infty, y \rightarrow 0$

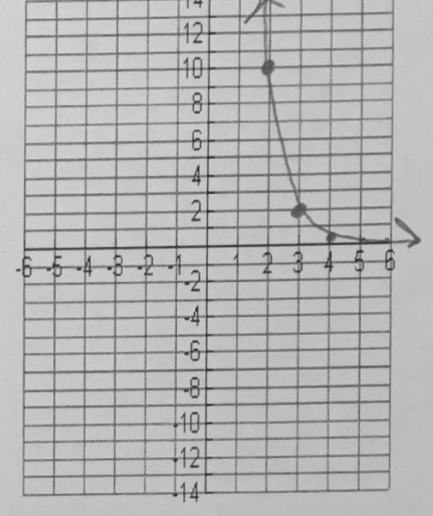
2.  $f(x) = \left(\frac{1}{3}\right)^x$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow \infty$   
 $x \rightarrow \infty, y \rightarrow 0$

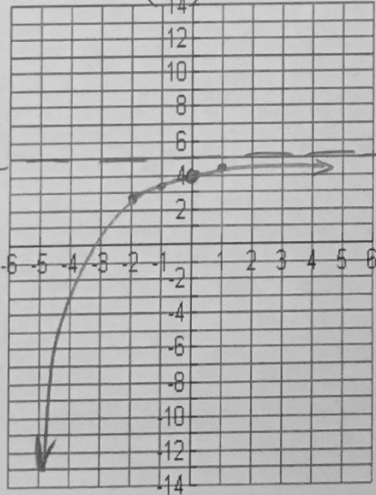
3.  $y = 2\left(\frac{1}{5}\right)^{x-3}$



Domain:  $(-\infty, \infty)$   
Range:  $(0, \infty)$   
Asymptote:  $y = 0$

$x \rightarrow -\infty, y \rightarrow \infty$   
 $x \rightarrow \infty, y \rightarrow 0$

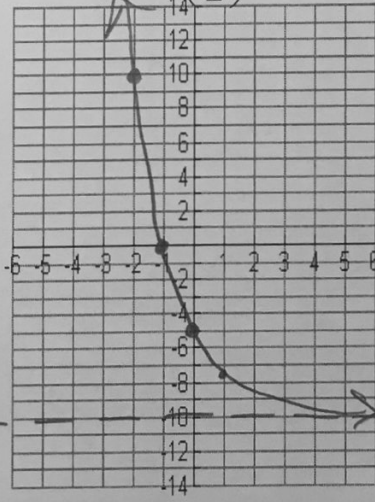
4.  $y = -\left(\frac{2}{3}\right)^x + 5$



Domain:  $(-\infty, \infty)$   
Range:  $(-\infty, 5)$   
Asymptote:  $y = 5$

$x \rightarrow -\infty, y \rightarrow -\infty$   
 $x \rightarrow \infty, y \rightarrow 5$

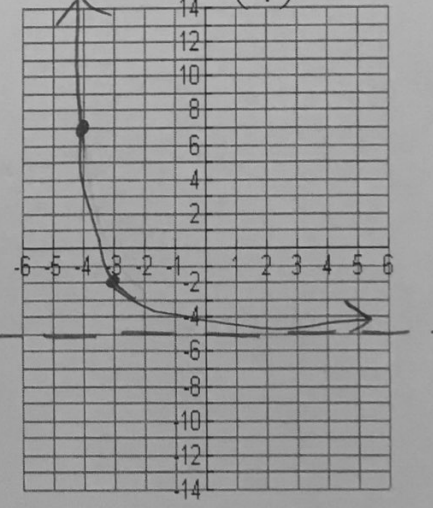
5.  $f(x) = 5\left(\frac{1}{2}\right)^x - 10$



Domain:  $(-\infty, \infty)$   
Range:  $(-10, \infty)$   
Asymptote:  $y = -10$

$x \rightarrow -\infty, y \rightarrow \infty$   
 $x \rightarrow \infty, y \rightarrow -10$

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



Domain:  $(-\infty, \infty)$   
Range:  $(-5, \infty)$   
Asymptote:  $y = -5$

$x \rightarrow \infty, y \rightarrow \infty$   
 $x \rightarrow -\infty, y \rightarrow -5$