Name:_____ Date:_____Period:_____

Notes: Introduction to Exponential Functions

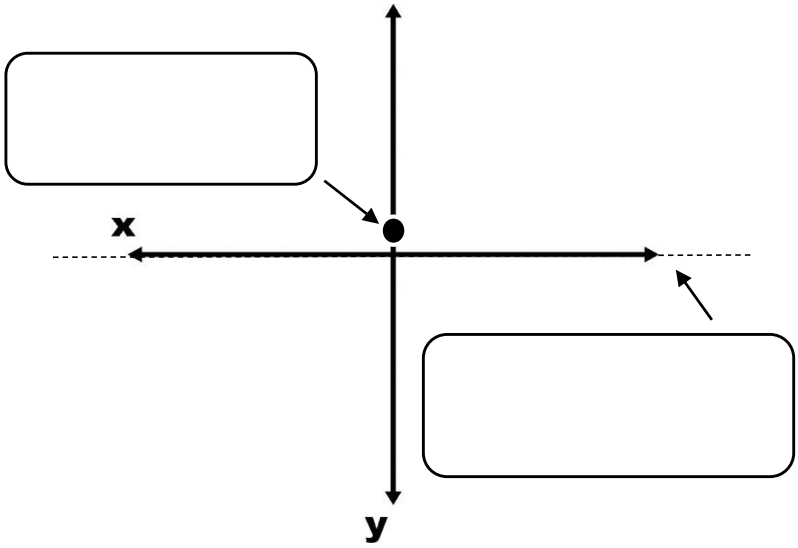
CHARACTERISTICS OF EXPONENTIAL FUNCTIONS

Parent Function:

$f(x) = b^x$

$f(x) = 2^x$

x	f(x)
-2	
-1	
0	
1	
2	

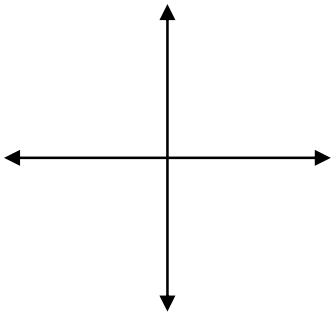


What is an ASYMPTOTE?

A_____ that a curve _____

as it heads toward _____.

Exponential GROWTH

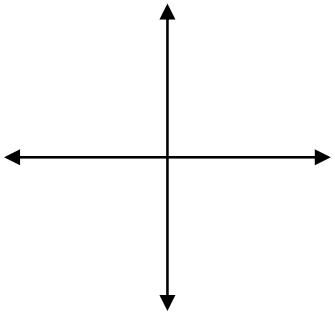


Quantity may _____

over time

$b > 1$

Exponential DECAY



Quantity may _____

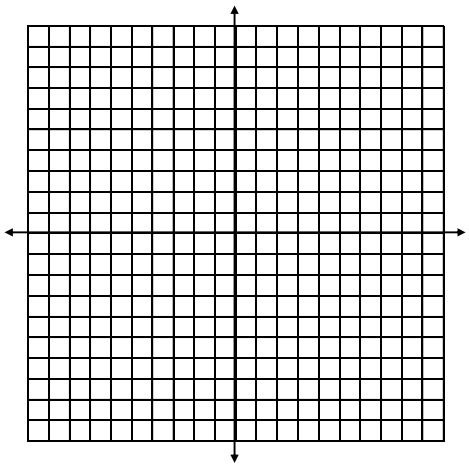
over time

$0 < b < 1$

Create a table of values for the given function. Then graph the function and identify key characteristics.

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

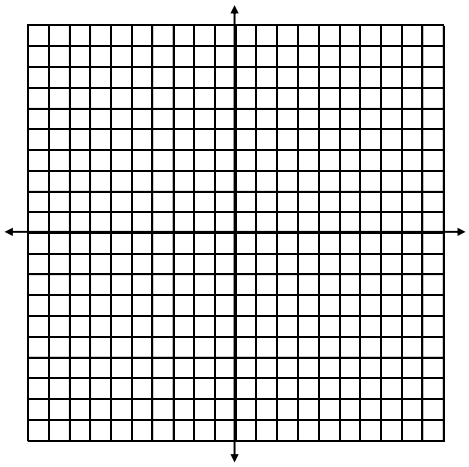
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

2. $f(x) = 3^x$

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

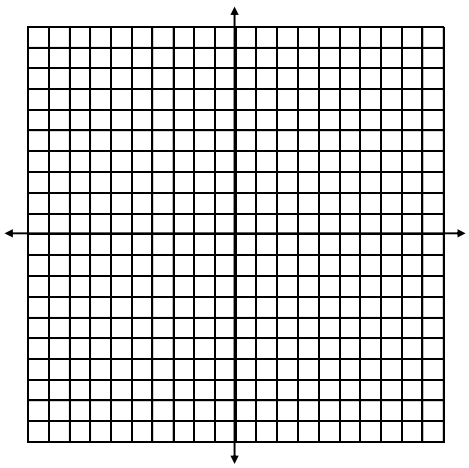
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

Asymptote:_____

y-intercept:_____

Growth or Decay?_____

Recap:

Parent function: f(x) = b^x If b > 1, the function is exponential _____

If 0 < b < 1, the function is exponential_____

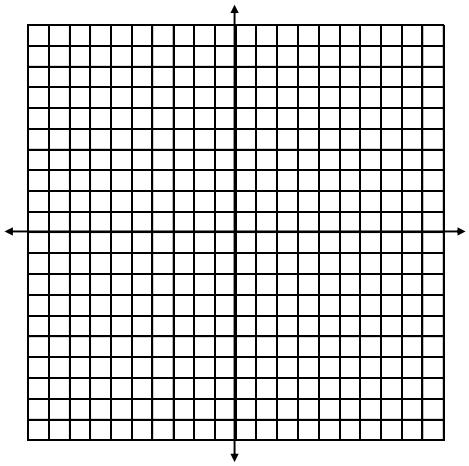
Name:_____ Date:_____Period:_____

A.__ Introduction to Exponential Functions

Create a table of values for the given function. Then graph the function and identify key characteristics.

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

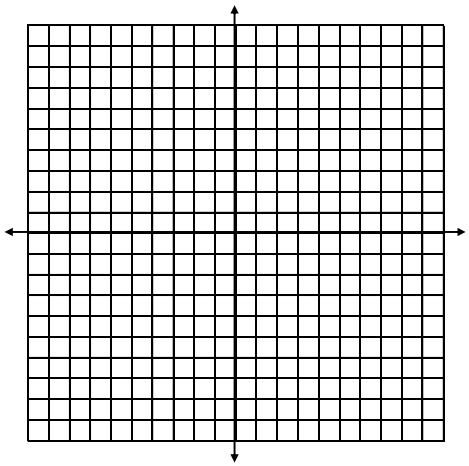
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

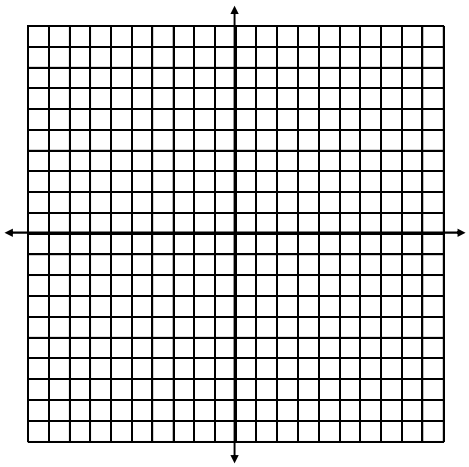
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

3. $f(x) = 4^x$

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

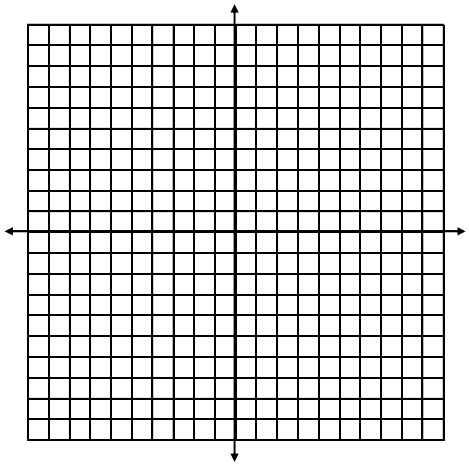
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

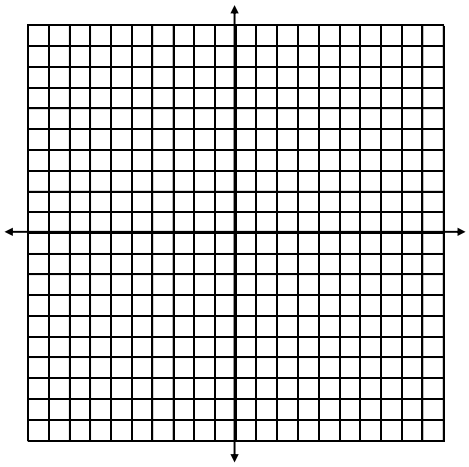
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

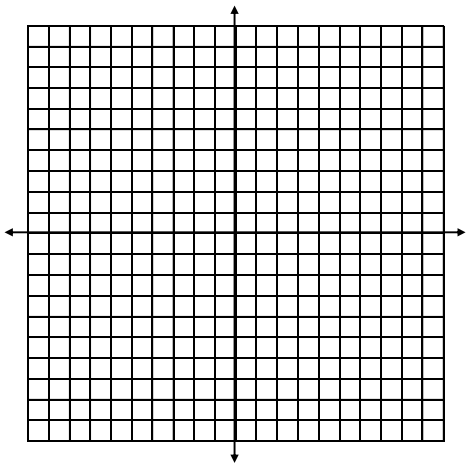
Asymptote:_____

y-intercept:_____

Growth or Decay?_____

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

x	f(x)
-2	
-1	
0	
1	
2	



Domain:_____

Range:_____

Asymptote:_____

y-intercept:_____

Growth or Decay?_____