Name: _____ Due Date: _____ Hour: _____

Homework (8-7)

(Ex: 1) **Evaluate each function rule for the given value.**

1. $f(x) = 6^x$ for $x = 3$
2. $g(t) = 2 \cdot 3^t$ for $t = -2$
3. $y = 20\left(\frac{1}{2}\right)^x$ for $x = 3$
4. $h(w) = 0.5 \cdot 4^w$ for $w = 3$

(Ex: 2) **Fill in the table for the following situations.**

5. Suppose an investment of $10,000 doubles in value every 13 years. How much is the investment worth after 52 years? After 65 years?

years	Investment value
0	$10,000
13	
26	
39	
52	
65	

6. Suppose an investment of $500 doubles in value every 15 years. How much is the investment worth after 30 years? After 45 years?

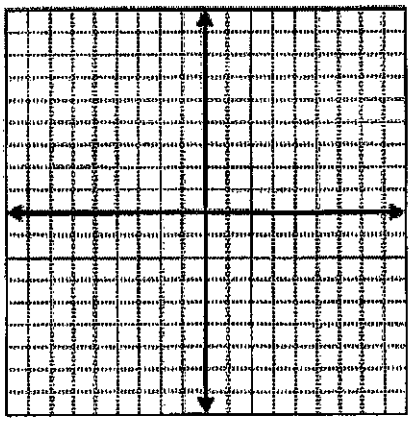
Years	Investment value
15	
30	
45	
60	
75	

7. Suppose an investment of $2,000 triples in value every 8 years. How much is the investment worth after 24 years? After 32 years?

(Ex: 3) **Graph each function. (8-11)**

8.

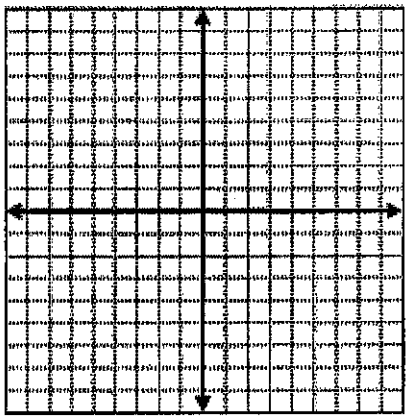
x	$y = 10 \cdot 2^x$	y	(x, y)
-2	$y = 10 \cdot 2^{-2} =$		
-1	$y = 10 \cdot 2^{-1} =$		
0	$y = 10 \cdot 2^0 =$		
1	$y = 10 \cdot 2^1 =$		
2	$y = 10 \cdot 2^2 =$		



Name: _____ Date: _____ Hour: _____

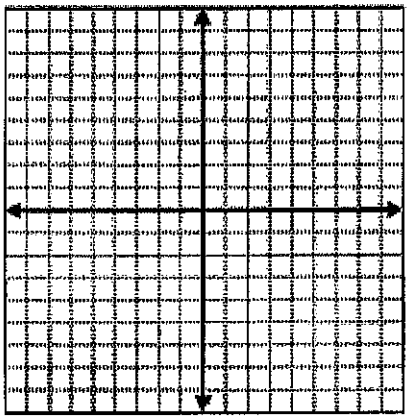
9.

x	$y = 0.1 \cdot 2^x$	y	(x,y)
-2			
-1			
0			
1			
2			



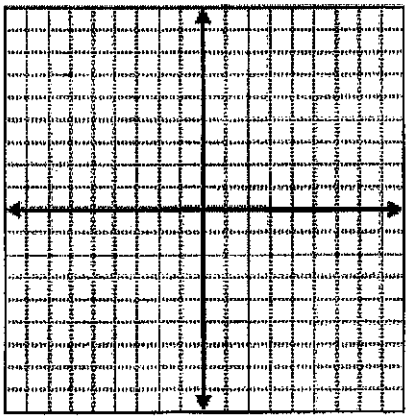
10.

x	$y = \left(\frac{1}{4}\right)^x$	y	(x,y)
-2			
-1			
0			
1			
2			



11.

x	$y = \frac{1}{4}\left(\frac{1}{2}\right)^x$	y	(x,y)
-2			
-1			
0			
1			
2			



Ex: 4

Graph each function.

12. $y = \frac{1}{4}(2)^x$

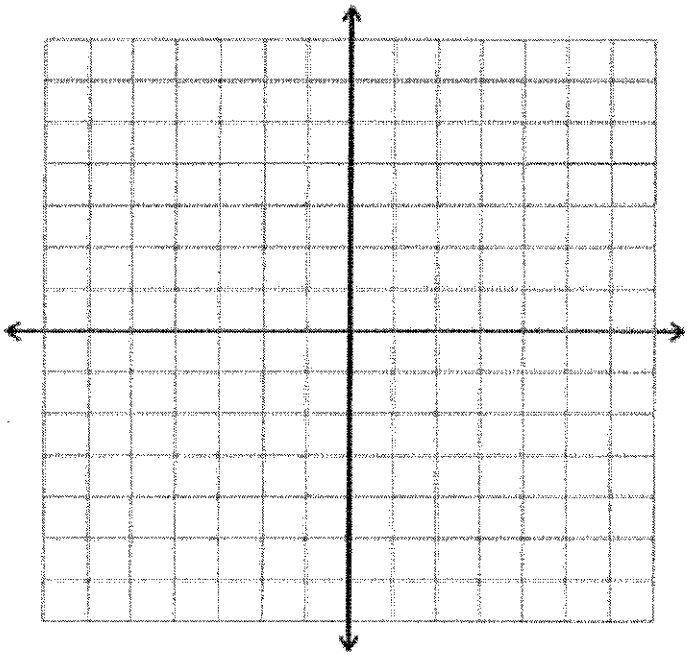
x	y
-2	$\frac{1}{16}$
-1	$\frac{1}{8}$
0	$\frac{1}{4}$
1	$\frac{1}{2}$
2	1

A. growth/decay? _____

B. asymptote _____

C. domain _____

D. range _____



13. $y = 3^x$

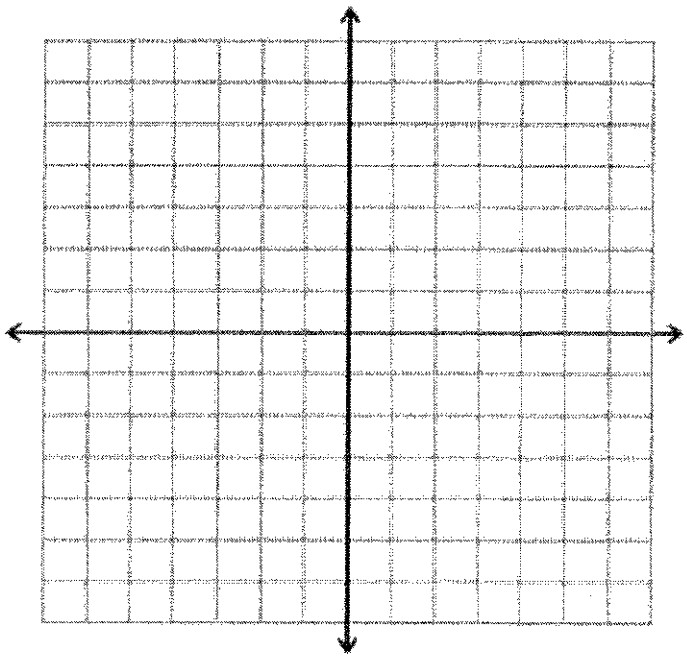
x	y
-2	$\frac{1}{9}$
-1	$\frac{1}{3}$
0	1
1	3
2	9

A. growth/decay? _____

B. asymptote _____

C. domain _____

D. range _____



14. $y = -2(2)^x$

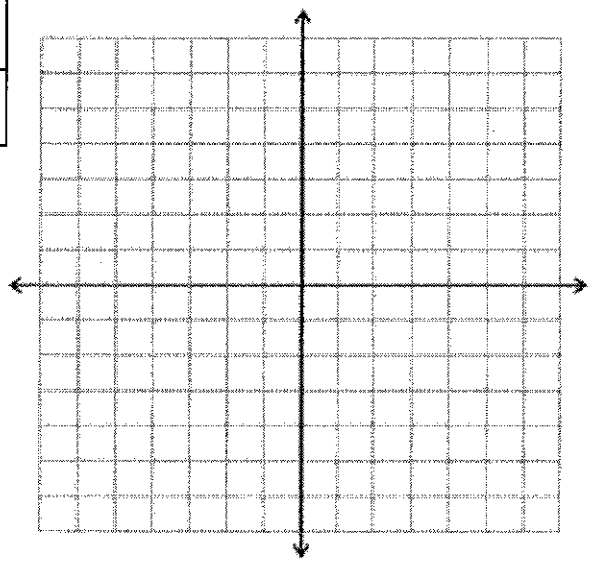
x	y
-2	$-\frac{1}{2}$
-1	-1
0	-2
1	-4
2	-8

A. growth/decay? _____

B. asymptote _____

C. domain _____

D. range _____



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

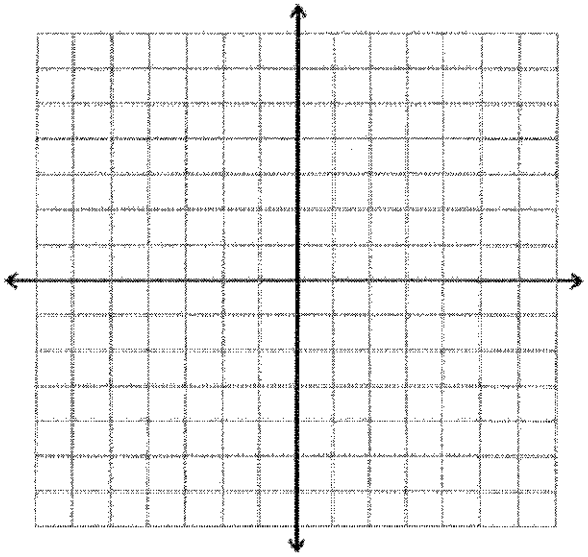
x	y
-2	-12
-1	-6
0	-3
1	$-\frac{3}{2}$
2	$-\frac{3}{4}$

A. growth/decay? _____

B. asymptote _____

C. domain _____

D. range _____



16. $y = 2(\frac{1}{3})^x$

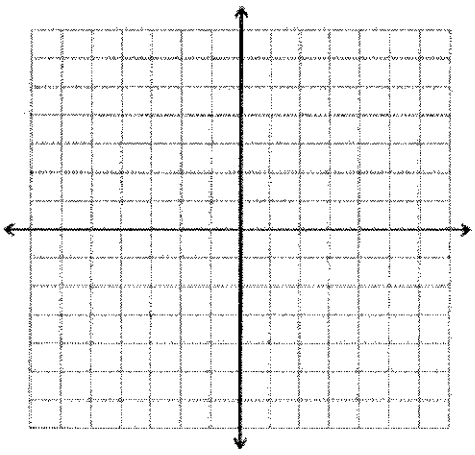
x	y
-2	18
-1	6
0	2
1	$\frac{2}{3}$
2	$\frac{2}{9}$

A. growth/decay? _____

B. asymptote _____

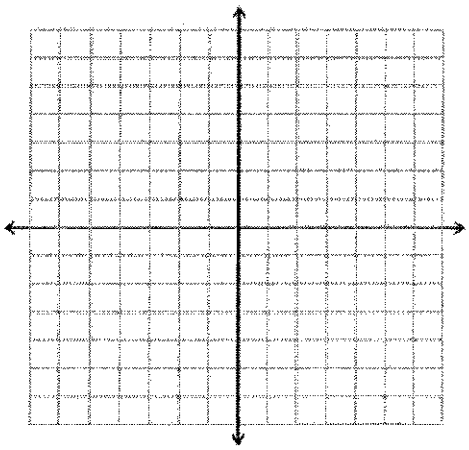
C. domain _____

D. range _____



17. $y = 2^x$ $y = \frac{1}{2}x$

intersection _____



$y = 2^x$

x	y
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4

$y = \frac{1}{2}x$

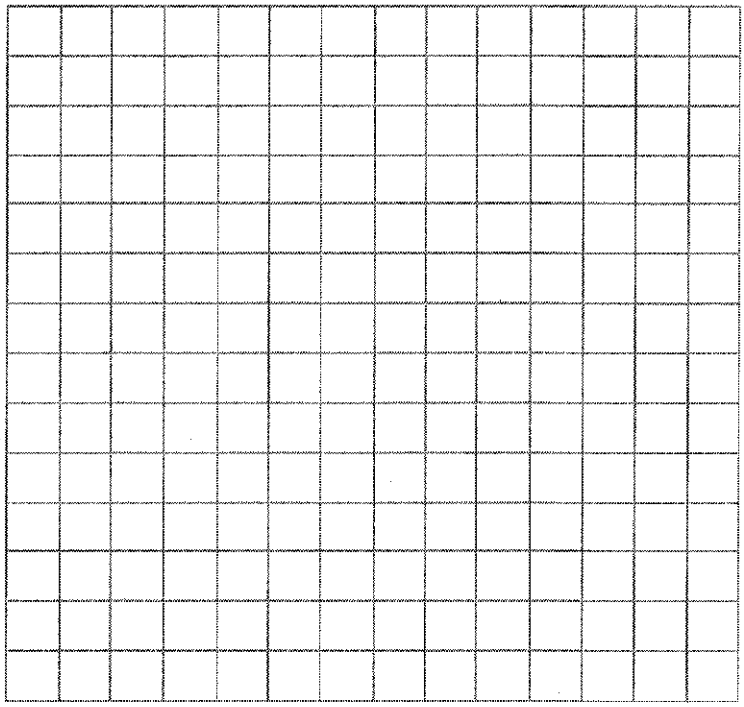
x	y
-2	-1
-1	$-\frac{1}{2}$
0	0
1	$\frac{1}{2}$
2	1

18. An investment of $2000 doubles every 8 years.

A. write an exponential function:

_____

B. graph this trend over the next 40 years



C. domain _____

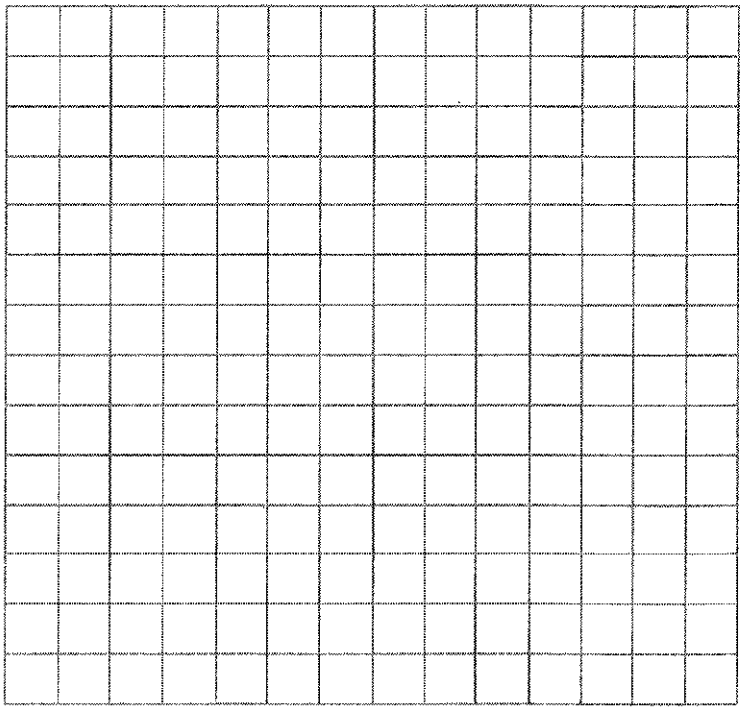
range _____

X		y	(x,y)
8			
16			
24			
32			
40			

19. A car depreciates in value each year. A brand new Explorer has a depreciation model of $y = 40000(0.91)^x$

_____Which statement is FALSE?

A. The car depreciates by 91% each year
B. The car depreciates by 9% each year
C. The decay factor is 0.91



Graph the values over 10 years.

Domain _____ Range _____

X	$40,000(.91)^x$	y	(x,y)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			