

LESSON
11-2 **Practice A**
Exponential Functions

1. If a superball is bounced from a height of 20 feet, the function $f(x) = 20(0.9)^x$ gives the height of the ball in feet of each bounce, where x is the bounce number. What will be the height of the 6th bounce? Round your answer to the nearest tenth of a foot. _____

Tell whether each set of ordered pairs satisfies an exponential function. Explain your answer.

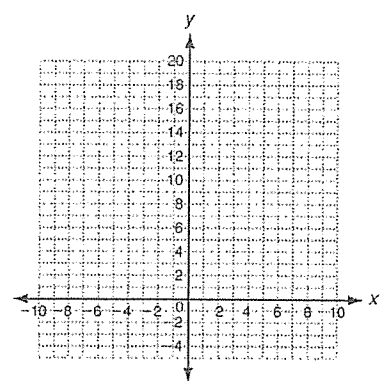
2. $\{(1,10), (2, 20), (3, 40), (4, 80)\}$ _____

3. $\{(1,5), (2, 10), (3, 15), (4, 20)\}$ _____

Graph each exponential function.

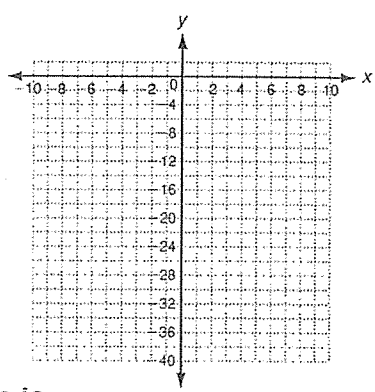
4. $y = 2(3)^x$

x	$y = 2(3)^x$	y	(x, y)
-2	$y = 2(3)^{-2}$		
-1	$y = 2(3)^{-1}$		
0	$y = 2(3)^0$		
1	$y = 2(3)^1$		
2	$y = 2(3)^2$		



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

x	$y = -2(4)^x$	y	(x, y)
-2			
-1			
0			
1			
2			



In the absence of predators, the natural growth rate of rabbits is 4% per year. A population begins with 100 rabbits. The function $f(x) = 100(1.04)^x$ gives the population of rabbits in x years.

6. How long will it take the population of rabbits to double? _____
7. How long will it take the population of rabbits to reach 1000? _____

LESSON **Practice B**
11-2 **Exponential Functions**

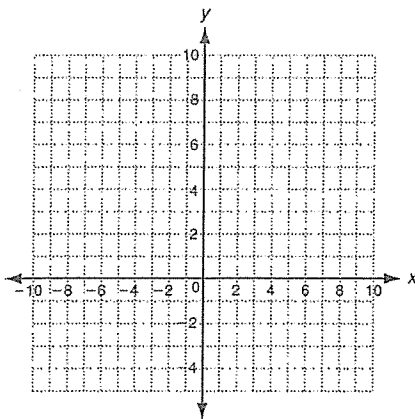
1. If a basketball is bounced from a height of 15 feet, the function $f(x) = 15(0.75)^x$ gives the height of the ball in feet of each bounce, where x is the bounce number. What will be the height of the 5th bounce? Round to the nearest tenth of a foot.
- _____

Tell whether each set of ordered pairs satisfies an exponential function. Explain your answer.

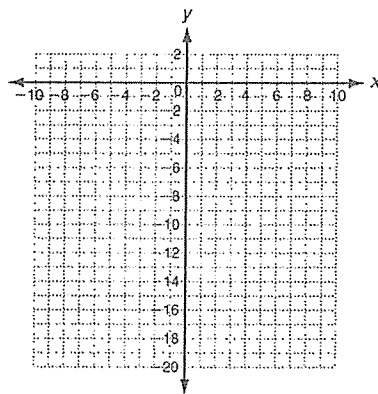
2. $\{(2, 4), (4, 8), (6, 16), (8, 32)\}$ _____
- _____
3. $\{(-2, 5), (-1, 10), (0, 15), (1, 20)\}$ _____
- _____
4. $\{(1, 750), (2, 150), (3, 30), (4, 6)\}$ _____
- _____
5. $\left\{\left(-5, \frac{1}{3}\right), (0, 1), (5, 3), (10, 9)\right\}$ _____
- _____

Graph each exponential function.

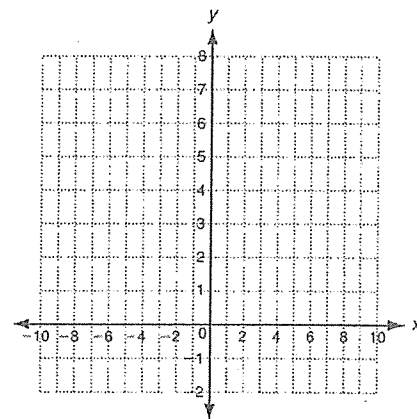
6. $y = 5(2)^x$



7. $y = -2(3)^x$



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



In the year 2000, the population of Virginia was about 7,400,000. Between the years 2000 and 2004, the population in Virginia grew at a rate of 5.4%. At this growth rate, the function $f(x) = 7,400,000(1.054)^x$ gives the population x years after 2000.

9. In what year will the population reach 15,000,000? _____
10. In what year will the population reach 20,000,000? _____