Name _____ Date _____ Class _____

*h w*

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
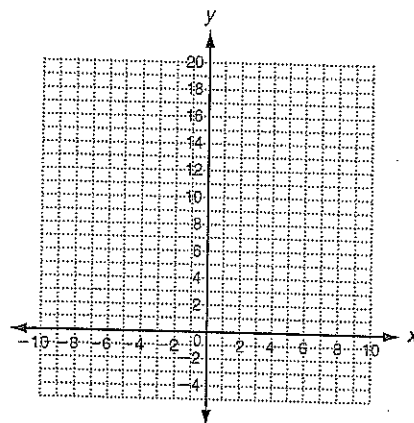function. Explain your answer.

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

_____

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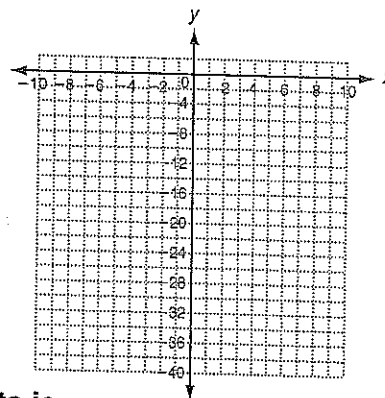
_____

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? _____

Holt Algebra 1

Name _____ Date _____ Class _____

TEKS A.1.C

LESSON **Practice B**

**11-2** *Exponential Functions*

*Hw*

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. $\{(-2, 5), (-1, 10), (0, 15), (1, 20)\}$ _____
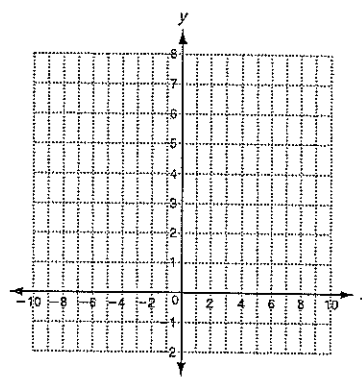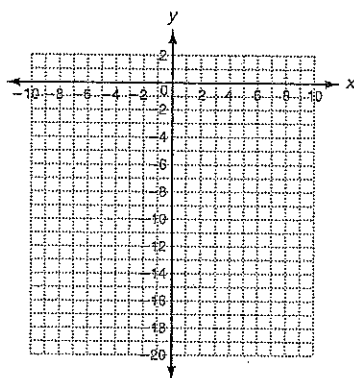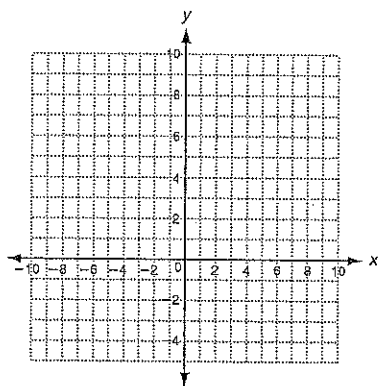
   _____

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? _____

Holt Algebra 1