

Day 1: Evaluating Exponential Functions

Name: _____

Practice Assignment

Evaluate each exponential function for the stated value.

1. $f(x) = \frac{1}{3}(6)^x$; $x = 2$

2. $f(n) = 10(2)^n$; $f(-2)$

3. $y = 4 \cdot 2^x$; $x = 4$

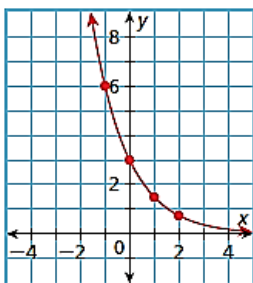
Answer the following word problems:

4. If a basketball 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.

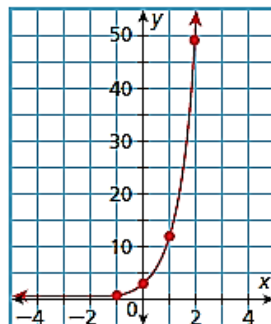
5. Suppose the depth of a lake can be described by the function $y = 334(0.976)^x$, where x represents the number of weeks from today. Today, the depth of the lake is 334 ft. What will be the depth in 6 weeks? Round your answer to the nearest whole number.

Name the asymptote for each graph:

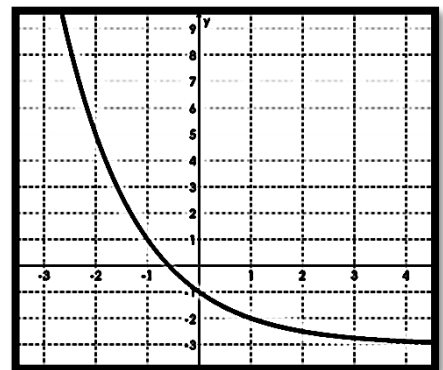
6.



7.



8.



Directions: Decide whether each of the following is an example of exponential growth (increase) or decay (decrease) and explain why. Then state the y-intercept.

9. $y = 5^x$

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

11. $y = -3^x$

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

Directions: Create an equation to represent each table or graph.

13.

| x | y |
|-----|-----|
| -1 | 1.5 |
| 0 | 3 |
| 1 | 6 |
| 2 | 12 |

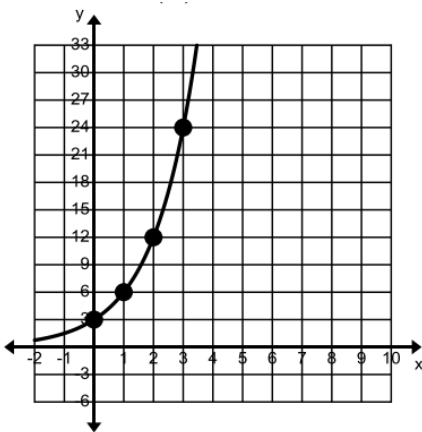
14.

| Volleyball Tournament | |
|-----------------------|------------|
| Round | Teams Left |
| 1 | 16 |
| 2 | 8 |
| 3 | 4 |
| 4 | 2 |

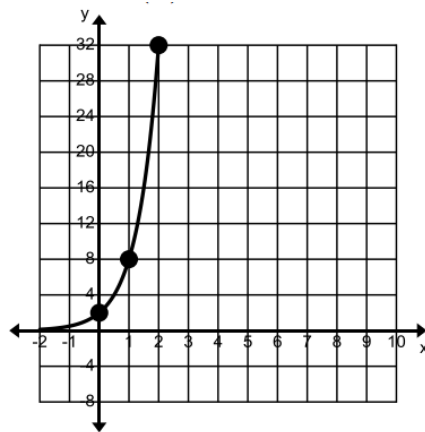
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| | | | | | | |
|-----|----------------|---------------|---|---|----|----|
| x | 0 | 1 | 2 | 3 | 4 | 5 |
| y | $\frac{1}{16}$ | $\frac{1}{4}$ | 1 | 4 | 16 | 64 |

16.



17.



21.

