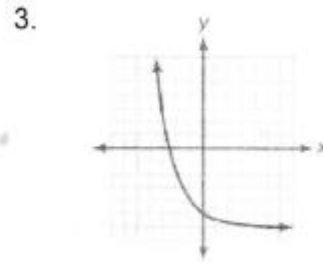
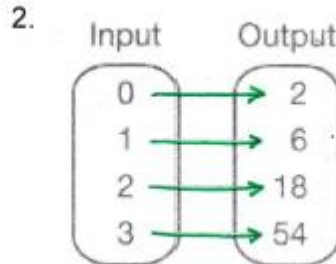
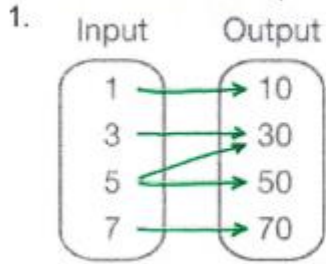
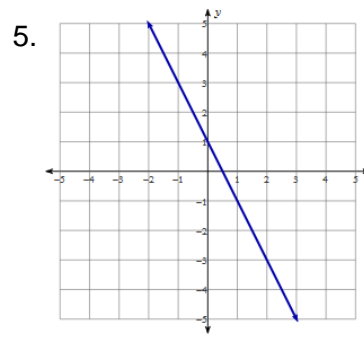
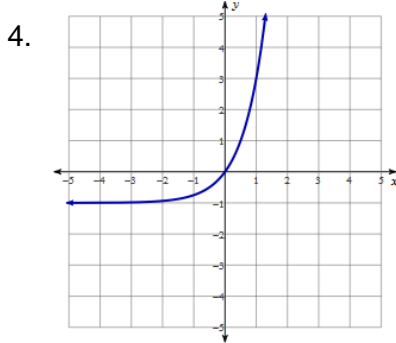


Determine whether each relation is a function.



For each graph, determine the graph is increasing or decreasing and its end behavior.



The graph is always _____.

The graph is always _____.

The graph _____ on the left.

The graph _____ on the left.

The graph _____ on the right.

The graph _____ on the right.

6. Identify the x and y intercepts.

x	-24	-12	0	12	24
$f(x)$	-8	-6	-4	-2	0

x - intercept: _____

y - intercept: _____

7. The highest possible grade for a report is 100. Each day the report is late, the teacher deducts 10 points.

Days Late, x	0	1	2	3	4
Starting Grade, $g(x)$	100	90	80	70	60

Could the situation be modeled by a linear or exponential function? _____

Write a function that could be used to model the relationship.

8. The equation $A(t) = 900(0.85)^t$ represents the value of a motor scooter t years after it was purchased. Which statement is also true of this situation?

a) When new, the scooter cost \$765.

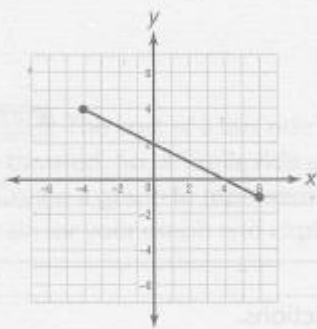
b) When new, the scooter cost \$900.

c) The scooter's value is decreasing at a rate of 85% each year.

d) The scooter's value is decreasing at a rate of 0.015% each year.

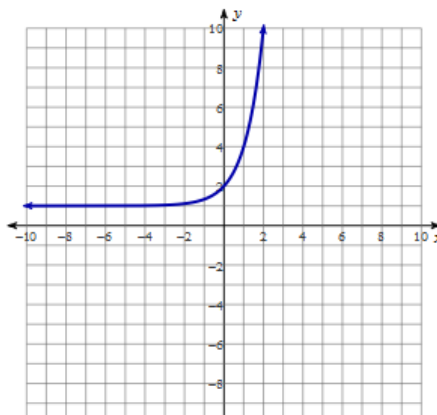
9.

Which statement about this function is **not** true?



- A. Its domain is $\{-4 \leq x \leq 6\}$.
 B. Its range is $\{-1 \leq y \leq 4\}$.
 C. It has a y -intercept at $(0, 2)$.
 D. It has a maximum of 6.

10.



- a) Determine the average rate of change between $(0, 2)$ and $(1, 4)$.
 b) Determine the average rate of change between $(1, 4)$ and $(2, 10)$.

11.

The formula $a_n = 10 - 4n$ describes an arithmetic sequence. What are the first four terms of the sequence?

- a) 6, 2, -2, -6
 b) 6, 2, 0, -2
 c) 10, 6, 2, -2
 d) 14, 18, 22, 26

12.

Which formula can be used to find the n th term in a sequence below?

128, 96, 72, 54, ...

- a) $a_n = 128 \left(\frac{3}{4}\right)^{n-1}$
 b) $a_n = 128 \left(\frac{4}{3}\right)^{n-1}$
 c) $a_n = 128 \left(\frac{3}{4}\right)^n$
 d) $a_n = 128 \left(\frac{4}{3}\right)^n$

13.

Given the sequence

- 40, - 33, - 26, - 19,....

Which of the following would be the explicit formula to represent the sequence?

- a) $a_n = -40 + 7n$
 b) $a_n = -33 + 7n$
 c) $a_n = -40 - 7n$
 d) $a_n = -47 + 7n$

14.

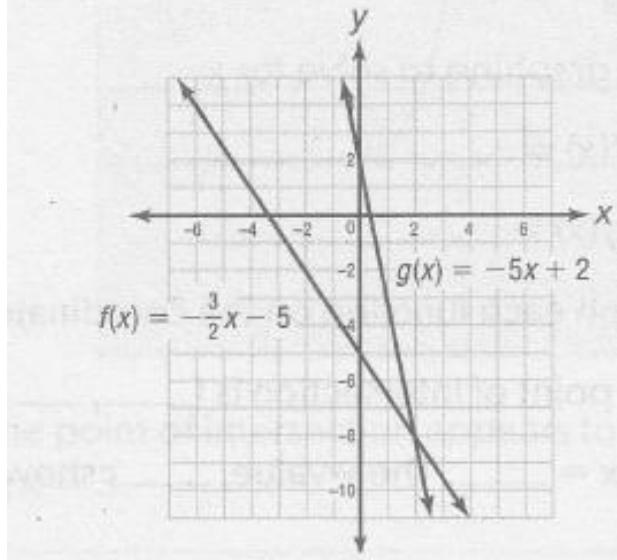
Find the 7th term in the sequence -1, 4, -16, 64, ...

- a) $a_7 = -16384$
 b) $a_7 = 4096$
 c) $a_7 = -4096$
 d) $a_7 = 16384$

Solve each equation by using the given graph.

15.

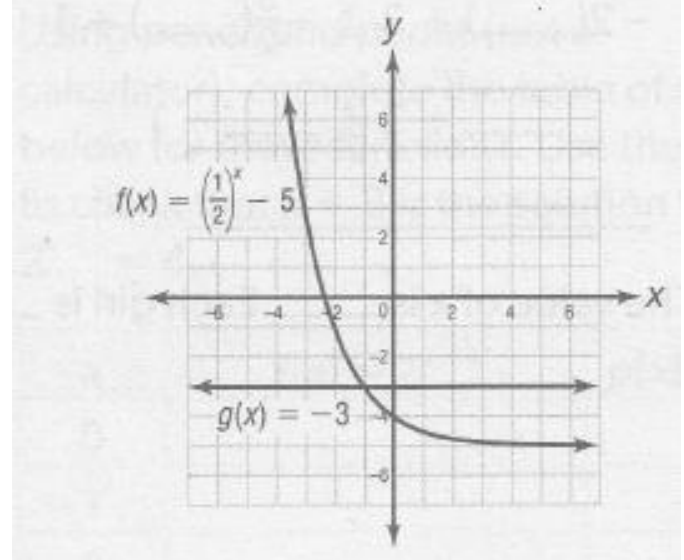
$$-\frac{3}{2}x - 5 = -5x + 2$$



x = _____

16.

$$\left(\frac{1}{2}\right)^x - 5 = -3$$



x = _____

17. Solve the equation for x by using the given table.

$$\frac{1}{2}x + 1 = \frac{3}{2}x - \frac{1}{2}$$

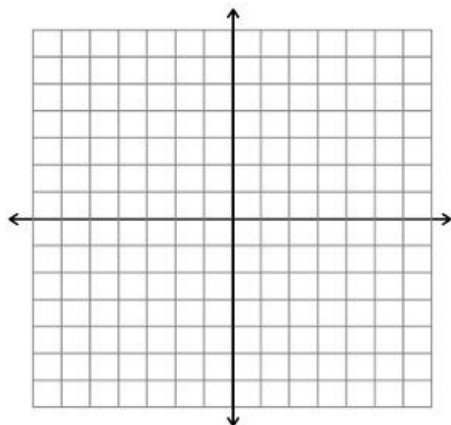
x	$f(x) = \frac{1}{2}x + 1$	$g(x) = \frac{3}{2}x - \frac{1}{2}$
0	1	$-\frac{1}{2}$
$\frac{1}{2}$	$\frac{5}{4}$	$\frac{1}{4}$
1	$\frac{3}{2}$	1
$\frac{3}{2}$	$\frac{7}{4}$	$\frac{7}{4}$
2	2	$\frac{5}{2}$

x = _____

18. Define two functions and graph them on the coordinate plane to solve for x .

$$x - 3 = -2x + 6$$

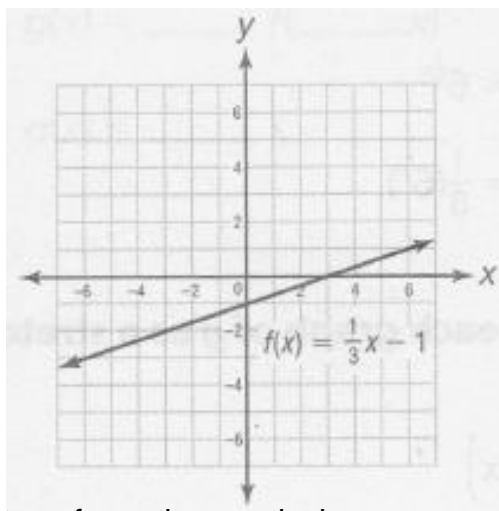
$$f(x) = \underline{\hspace{2cm}} \qquad g(x) = \underline{\hspace{2cm}}$$



$$x = \underline{\hspace{2cm}}$$

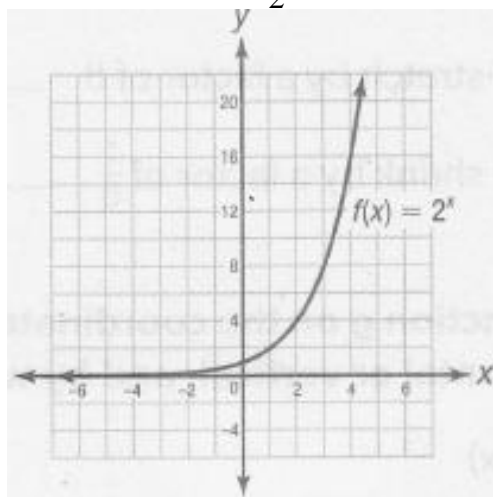
Graph each function g on the coordinate plane below it. Classify each graph of g as either a vertical stretch or a vertical shrink of the graph of f . Then identify the factor.

19. $g(x) = 2x - 6$



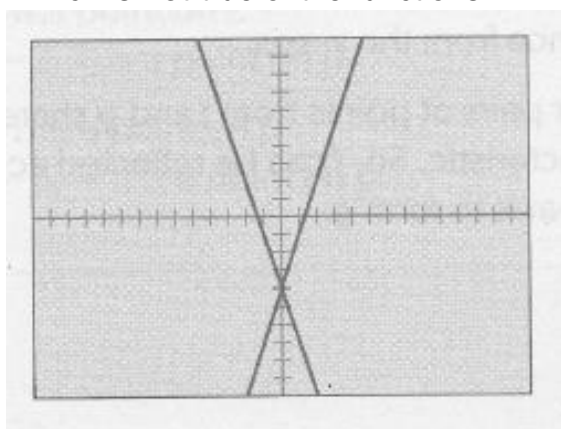
transformation: vertical _____
factor: _____

20. $g(x) = \frac{1}{2}(2^x)$



transformation: vertical _____
factor: _____

21. The graphing calculator screen below shows $f(x) = -3x - 4$ and its reflection g . Which is **not** true of the functions?



- A. $g(x) = f(-x)$
- B. Function f was reflected across the y -axis to form g .
- C. Both f and g have the same y -intercept.
- D. Both f and g have the same slope.