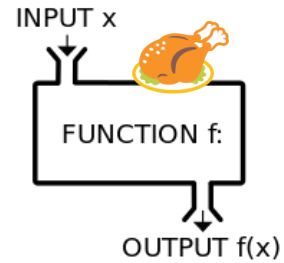


Name: _____

Date: _____

FUNCTIONS UNIT! REVIEW SHEET.

Part I Questions:



1. If $f(x) = -2x^2 + 3$ then $f(-3) =$

- (1) -15 (3) 39
(2) 21 (4) -18

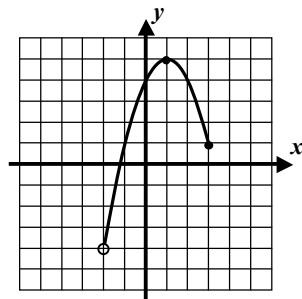
2. Which of the following sets of coordinate pairs is *not* a relationship where y is a function of x ? _____

- (1) $\{(-3, 1), (0, 5), (2, 7), (5, 1)\}$
(2) $\{(-2, 4), (-1, 0), (1, 7), (-2, -4)\}$
(3) $\{(-3, 10), (-2, 5), (1, 2), (2, 5)\}$
(4) $\{(4, 16), (5, 25), (7, 49), (10, 100)\}$

3. Jenna is selling glasses of lemonade for \$1.50 per cup. She begins the day with \$4.50 in change. The amount of money, m , she has as a function of the number of cups she sells is $m = 1.50c + 4.50$. Which of the following would be an appropriate domain for this function? _____

- (1) $\{-3, -2, -1, 0, 1, 2, 3\}$
(2) $\{1, 1.5, 2, 2.5, 3, 3.5\}$
(3) $\{0, 1, 2, 3, 4, 5, 6\}$
(4) $\{4.50, 6.00, 7.50, 9.00, 10.50\}$

4. Which of the following represents the range of the function shown in the graph below? _____



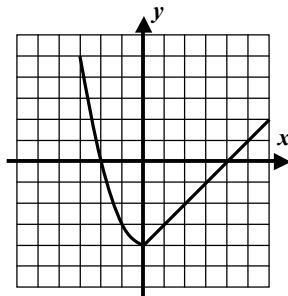
- (1) $(-4, 5]$
(2) $[-4, 5]$
(3) $[-2, 3]$
(4) $(-2, 3]$

5. Which of the following represents the average rate of change for the function $f(x) = x^2$ over the interval $1 \leq x \leq 3$? _____

- (1) 8 (3) 6
(2) 2 (4) 4

6. For the function $f(x)$ shown below, which of the following represents the interval over which $f(x) < 0$?

- (1) $-2 < x < 4$
- (2) $-2 \leq x \leq 4$
- (3) $-4 < x < 0$
- (4) $-4 \leq x \leq 0$



7. For the piecewise defined function $f(x) = \begin{cases} 3x - 1 & x < 3 \\ \frac{1}{2}x + 7 & x \geq 3 \end{cases}$, which of the following is the value of $f(6)$?

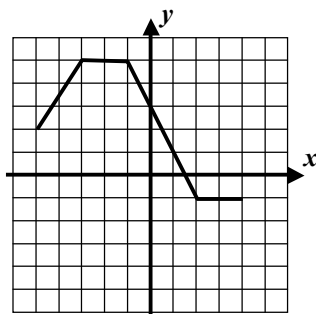
- (1) 7
- (2) 10
- (3) 17
- (4) 27

8. If $f(x) = x^2 - 2x - 11$, then which of the following values of x solves $f(x) = 4$?

- (1) $x = 0$
- (2) $x = -2$
- (3) $x = 3$
- (4) $x = 5$

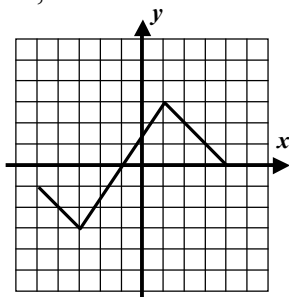
9. The function $f(x)$ is shown graphed below. The function g is defined by the formula $g(x) = 3f(x) - 2$ for all values of x in the domain of f . Which of the following is the value of $g(2)$?

- (1) -5
- (2) -1
- (3) 3
- (4) 4



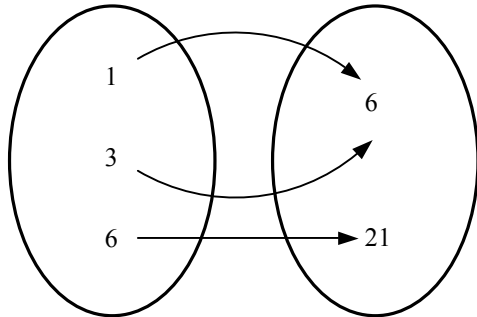
10. Given the graph of $h(x)$ shown below, over which of the following intervals is h increasing?

- (1) $-1 < x < 4$
- (2) $-3 < x < 1$
- (3) $-3 < x < 3$
- (4) $1 < x < 4$

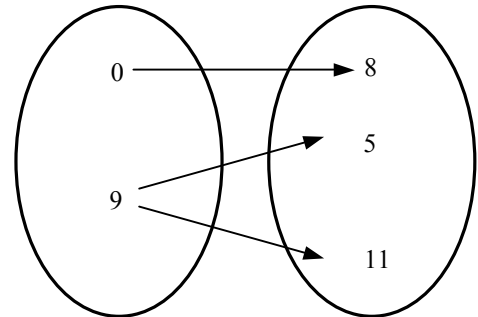


Free Response Questions:

11. The two diagrams below show how elements of a domain get changed into elements of a range. In one case, this represents a function. In the other case, it does not. Explain which is a function and which is not. Fully explain your choices.



Case #1

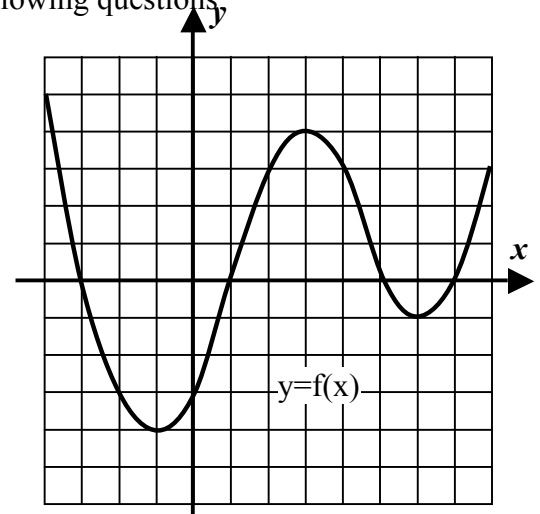


Case #2

12. For the function $y = f(x)$ shown graphed below, answer the following questions,

(a) Find the value of $f(3) + f(6)$.

(b) State all intervals over which $f(x) < 0$.



(c) Solve the equation $f(x) = 0$ for all value(s) of x . Circle the points on your graph that you use to find your solutions.

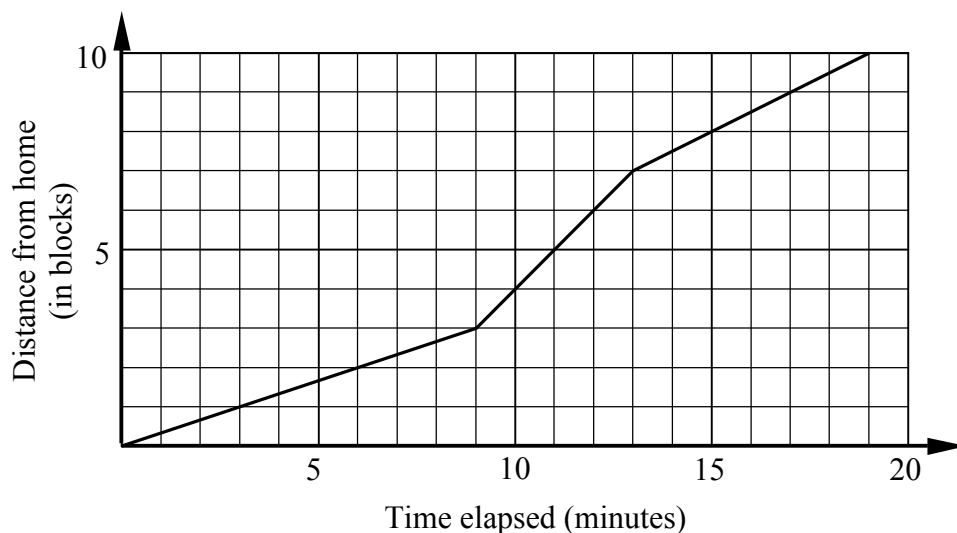
(d) Give an interval over which $f(x)$ is *only* decreasing.

13. Michael is walking from home to a subway stop that is 10 blocks away. Calculate Michael's average rate of change, in blocks per minute, for each of the following intervals:

0 to 9 minutes

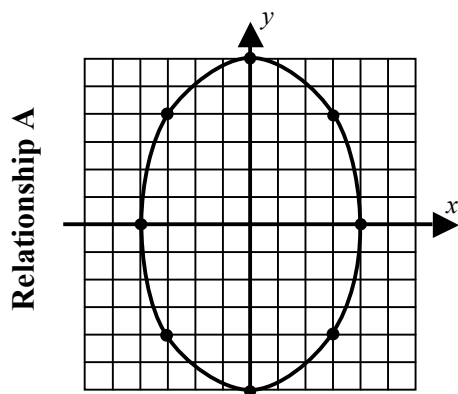
9 to 13 minutes

13 to 19 minutes

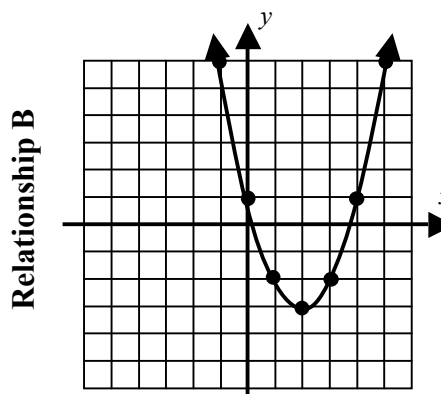


During which interval is Michael moving the slowest?

14. Circle if each of the following is a function:



Yes No



Yes No

15. The table below is partially filled out for the function $f(x) = x^2 - 3x - 4$.

x	-3	-2	-1	0	1	2	3	4	5
$f(x)$	14			-4		-6			6

(a) Fill out the remaining portions of the table.

(b) State the zeroes of the function.

(c) What is the maximum value of f on this interval?