

# Review Summative Assign.

## M10-C Relations and Functions Quiz C1-C5

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. An oven is turned on at a room temperature of  $20^{\circ}\text{C}$  and it takes 10 min to reach a temperature of  $190^{\circ}\text{C}$ . A tray of cookies is placed in the oven to bake for 10 min. The oven is then turned off and returns to room temperature after 15 min.
  - a. Sketch a graph of the temperature of the oven as a function of time. [2]

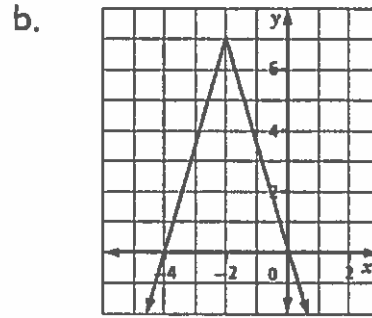
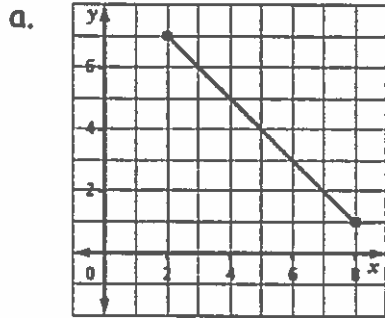
- b. What is the domain and range for this problem? [1]

2. For each relation, state the domain and range. [1 mark each]

- a. The cost for you and up to 4 of your friends to attend a concert at \$10 a ticket.

- b. The distance you drive in 3 hours if you travel at an average speed of 60 km/h.

3. For each relation, state the domain and range. [1 mark each]



4. You are emptying a full pop bottle at a rate of 25 mL/s as given by the equation  $V = 750 - 25t$ , where  $V$  is the volume of pop in the bottle in mL and  $t$  is the amount of time passed in seconds. The domain for this scenario is  $\{t \mid 0 \leq t \leq 30, t \in R\}$

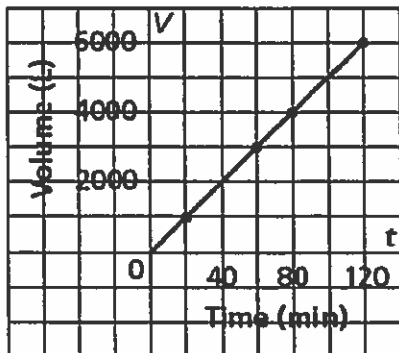
a. Express the relationship between the volume of pop in the bottle and the time passed as a table of values and a graph. [2]

b. What is the domain and range for this problem? [1]

5. Draw a graph of a relation that is a function and a graph of a relation that is not a function. [2]

6. The following graph shows volume,  $V$ , as a function of time,  $t$ , when a water tank is being filled. This function may be modelled by the equation  $V(t) = 50t$ .

Filling a Water Tank



- For the above function, the value of  $V(40)$  is \_\_\_\_\_.
  - If  $V(t) = 6000$  in the above graph, then the value of  $t$  is \_\_\_\_\_.
  - What is the domain and range of the above function?
7. For a single membership to WORKOUT Health Club, you pay a \$35 initiation fee upon enrollment and then \$25 a month. The cost of belonging to the club is represented by the function  $C(m) = 25m + 35$ .
- Determine  $C(10)$ . Explain what your solution means. [2]

- Determine  $m$  if  $C(m) = \$185$ . Show your work. [2]

8. Determine the x and y intercept for each equation

a)  $3x + 2y = 12$

b)  $x^2 + y^2 = 36$

careful

M10C Graphing Relations Assignment

Name: \_\_\_\_\_

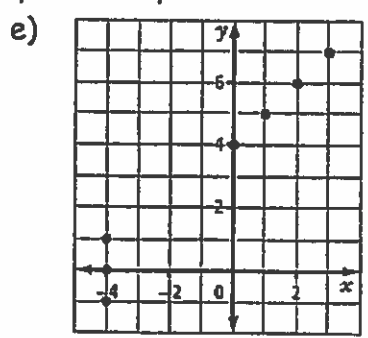
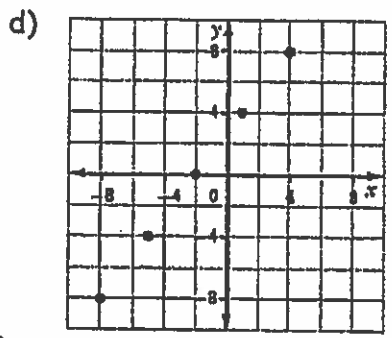
Answer the following questions on a separate sheet of paper.

1. You are emptying a full 500 mL pop bottle at a rate of 25mL/s. Express the relationship of the volume of pop in the bottle as time passes as an equation, a table of values, a set of ordered pairs and a graph.
  - a. What is the independent variable?
  - b. What is the dependent variable?
  - c. Complete the statement: \_\_\_\_\_ depends on \_\_\_\_\_.
  - d. What is the domain?
  - e. What is the range?
  - f. Is the data discrete or continuous?
  
2. You are an expert paper airplane maker and are selling paper airplanes for \$1.50 each. You currently have eight paper airplanes constructed and ready for sale. Express the relationship of your revenue and the number of airplanes sold as an equation, a table of values, a set of ordered pairs and a graph.
  - a. What is the independent variable?
  - b. What is the dependent variable?
  - c. Complete the statement: \_\_\_\_\_ depends on \_\_\_\_\_.
  - d. What is the domain?
  - e. What is the range?
  - f. Is the data discrete or continuous?
  
3. The path of a football during a field goal attempt is modeled by the equation,  $h = -4t^2 + 16t$ , where  $h$  = height of football in meters and  $t$  = time in seconds. Express this relationship as a table of values, a set of ordered pairs and a graph.
  - a. What is the independent variable?
  - b. What is the dependent variable?
  - c. Complete the statement: \_\_\_\_\_ depends on \_\_\_\_\_.
  - d. What is the domain?
  - e. What is the range?
  - f. Is the data discrete or continuous?

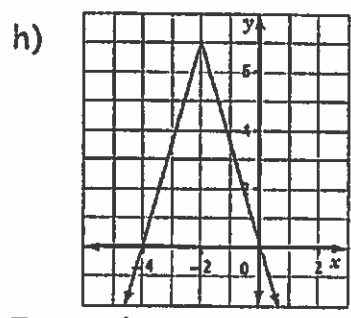
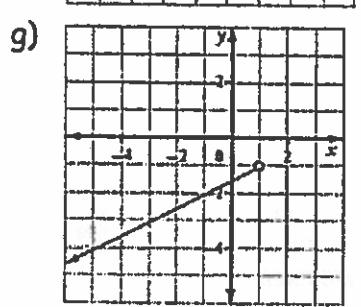
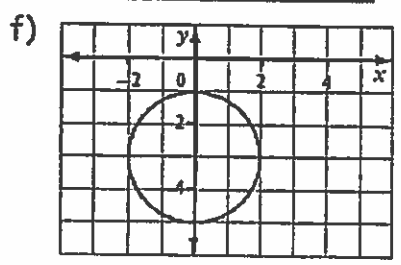
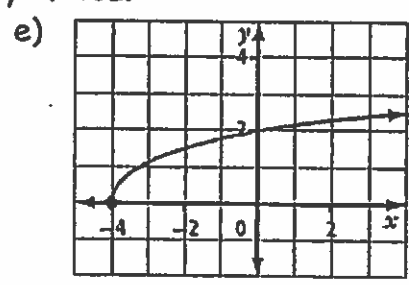
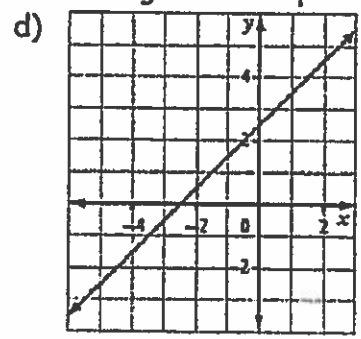
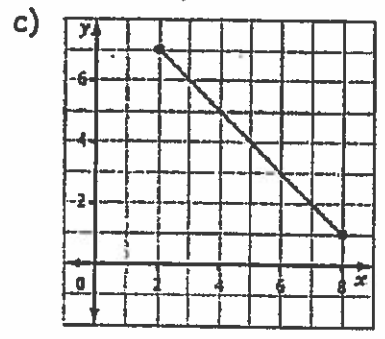
**Relations & Functions**  
**C4 - Domain & Range Notation Assignment**

Name: \_\_\_\_\_

1. For each relation, state the domain and range in List notation.
- The cost for you and up to 5 of your friends to attend a concert at \$40 per ticket.
  - Buying less than 4 cans of soup that cost \$0.50 each.
  - $y = \sqrt{x}$ , where  $x$  is the set of all perfect squares from 1 to 100.



2. For each relation, state the domain and range in Set notation.
- The cost for driving in a taxi for up to 20 km when the taxi charges \$2.00/km.
  - The cost,  $C$ , of filling up a car with gasoline and buying an \$8.00 car wash given by the equation  $C = 0.92n + 8.00$ , where  $n$  is the number of litres of gasoline purchased. The car has a gas tank capacity of 40L.

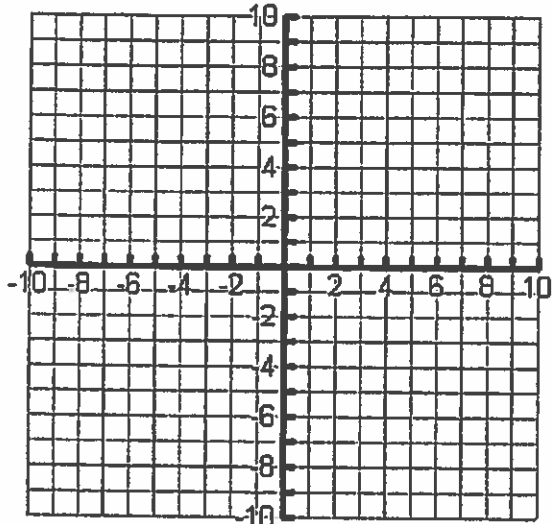


3. For each relation in #2, state the domain and range in Interval notation.

c)  $y = 2x$

Case #1

Domain:  $\{x | x \in \mathbb{R}\}$

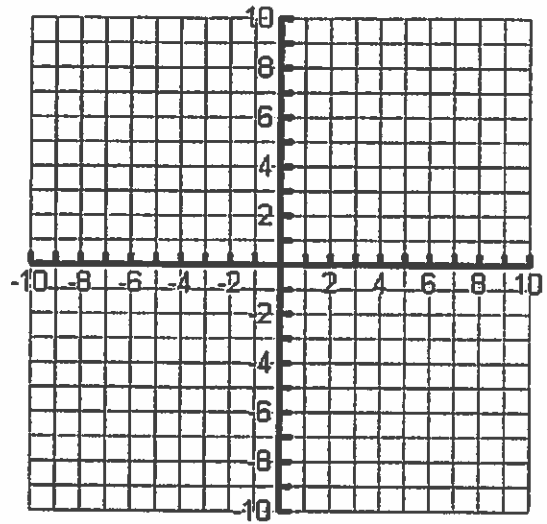


Range: \_\_\_\_\_

Case #2

Domain:  $[-2, 5)$

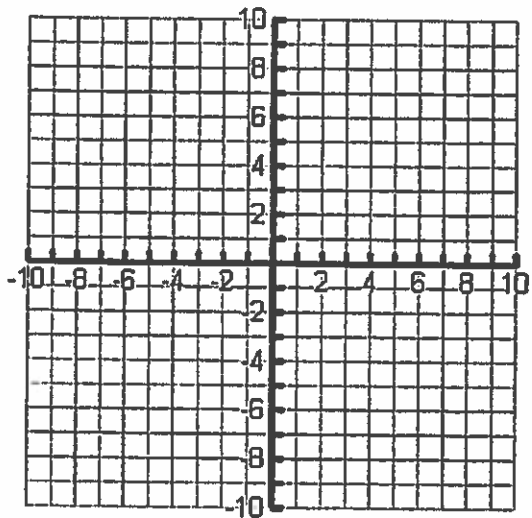
$\{x | x \geq 2, x < 5, x \in \mathbb{R}\}$



Range: \_\_\_\_\_

Case #3

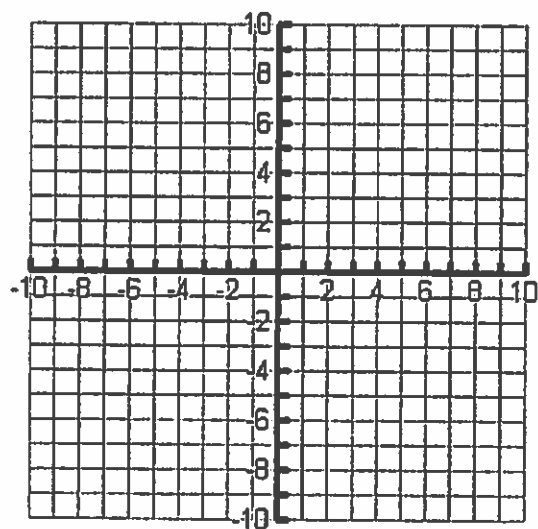
Domain:  $[0, \infty)$   $\{x | x \geq 0, x \in \mathbb{R}\}$



Range: \_\_\_\_\_

Case #4

Domain:  $\{-3, -2, -1, 0, 1, 2, 3\}$



Range: \_\_\_\_\_

We will do this together but try it by your self

Math 10-C Domain & Range Notation Assignment

Name: \_\_\_\_\_

Each table contains the domain for a graph expressed in words, set notation and interval notation. Complete each table. The first one has been done for you.

1.	Words:	All real #'s greater than or equal to 4 and less than 8.
	Set Notation:	$\{x   4 \leq x < 8, x \in R\}$
	Interval Notation:	$[4, 8)$

2.	Words:	
	Set Notation:	
	Interval Notation:	$[-3, 2]$

3.	Words:	All real #'s greater than or equal to 3.
	Set Notation:	
	Interval Notation:	

4.	Words:	
	Set Notation:	$\{x   x < 5, x \in R\}$
	Interval Notation:	

5.	Words:	All real #'s greater than or equal to -6 and less than or equal to 6.
	Set Notation:	
	Interval Notation:	

6.	Words:	
	Set Notation:	$\{x   x \in R\}$
	Interval Notation:	

7.	Words:	All whole #'s greater than or equal to -3 and less than or equal to 4.
	List:	

8.	Words:	
	List:	$\{0, 2, 4, 6, 8, 10\}$

