FMPC 10   Relations & Functions Extra Practice   Name: _____

1. Match each scenario with its appropriate graph.

_____ the number of donuts sold in the first two minutes of a fundraiser

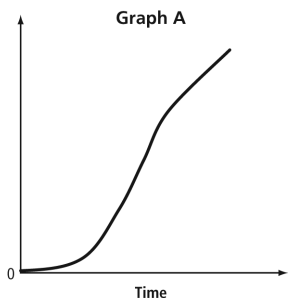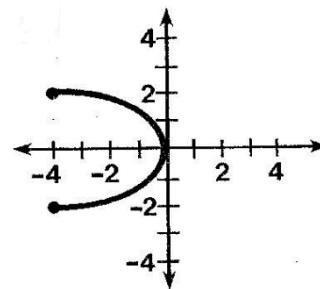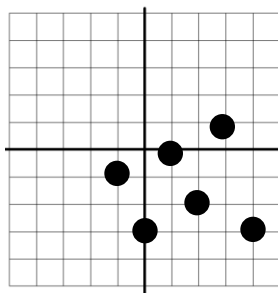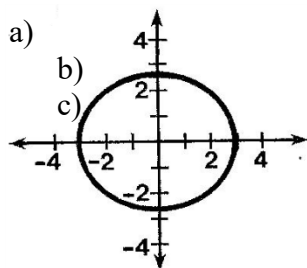_____ the profit of a restaurant from the day it opens until it goes bankrupt

_____ the intensity of light as you move away from a light source

_____ the vertical growth of a rose

Graph A   Graph B   Graph C   Graph D

Time   Time   Time   Time
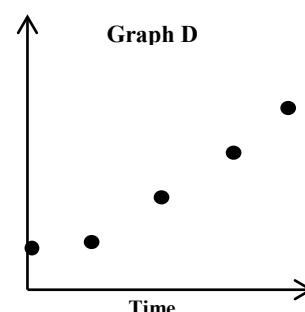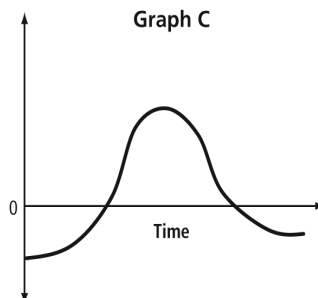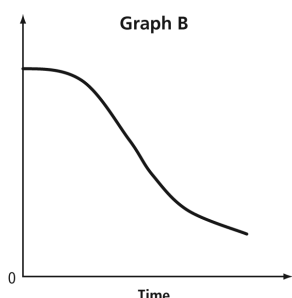
2. For each graph, identify the domain and range in the notation indicated.

a)

b)

c)

(a) interval notation
Domain:
Range :

(b) set notation
Domain:
Range:

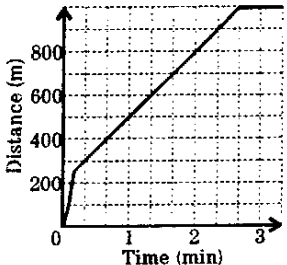| (c) set notation |
| --- |
| Domain: |
| |
| Range: |

3. Sally leaves school and rides her bike 3 km to a pet shop to buy food for her dog. She passes her house on the way to the store. After buying the food, she rides 1 km to her house.

    a. Sketch a graph of the distance from home versus time. Label your axes and each line segment.
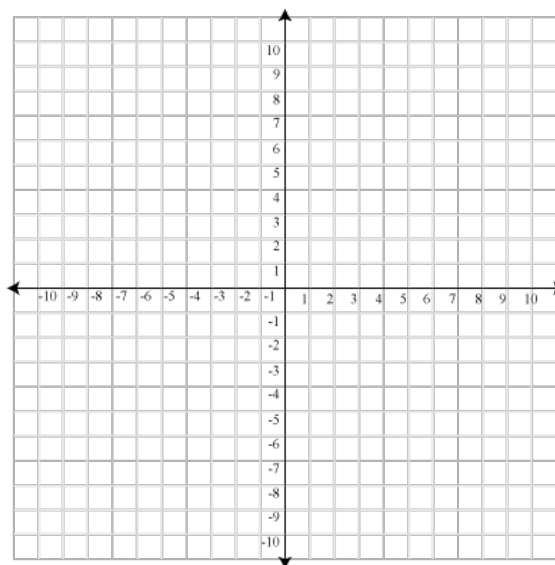
    b. Explain what is happening in each line segment.

4. For each relation, state the dependent variable and the independent variable. Then, identify the relation as linear or non-linear.

Relation	Independent Variable	Dependent Variable	Linear (Y or N)
a) $2x^2 - y = 8$			
b) $C = 2\pi r$			
c)			
d)			

x	y
-3	-10
-2	-15
-1	-20
0	-25
1	-30

5. Fill out the table of values and graph the equation:
$$y = 3x - 2$$
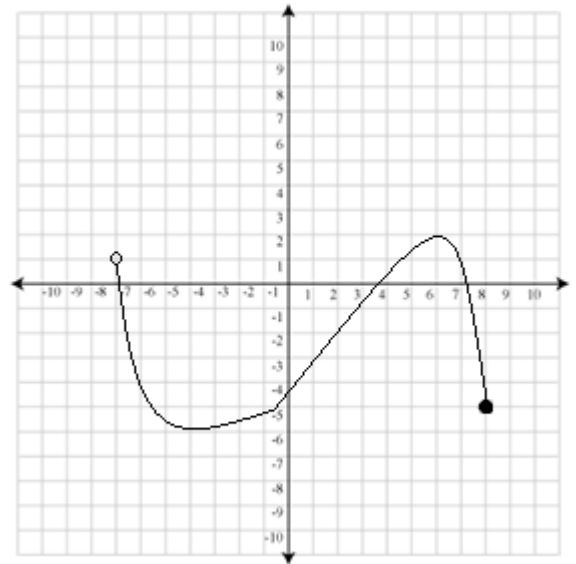
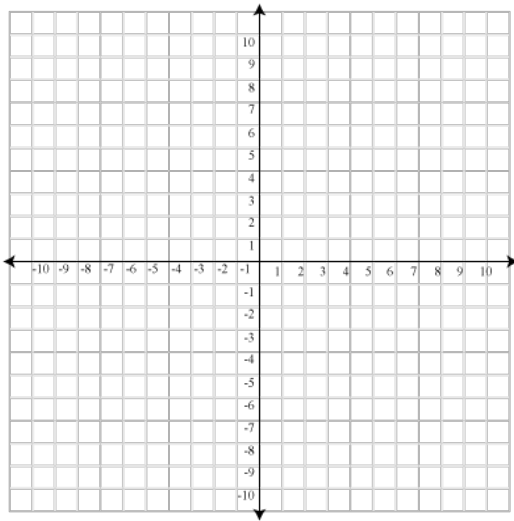| X	y

3

6. State the Domain and Range of the following graph in set notation:

Domain:

Range:

7. Graph the following. (The table of values is optional!)

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

Domain: $-4 < x \le 4$

X	y

8. Determine if each relation is a function (F) or not (N). Circle your answer.

a) $\{(1, 2), (2, 3), (1, 4)\}$
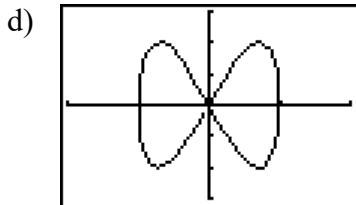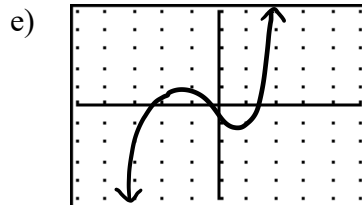
       F or N

b) $y = 4x^2 - 9$

       F or N

c) $x^2 + y^2 = 16$

       F or N

d)

       F or N

e)

       F or N

4
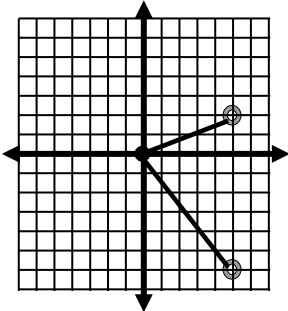
9. State the domain and range of each of the following relations.

a) $\{(1, 2), (2, 3), (1, 4)\}$ D: _____ (set notation)

                                                    R: _____ (as a list)

b) $y = x^2$ D: _____ (words)

                                                    R: _____ (number line)

c)   D: _____ (interval notation)

                                                    R: _____ (set notation)

10. If $f(x) = 3x + 7$, determine
     a. $f(-2)$

     b. $f\left(\frac{1}{3}\right)$

     c. x if $f(x) = 34$