# Extra Practice

November 13, 2017 8:53 PM

FMPC 10 Chapter 3 Extra Practice Name: KEY

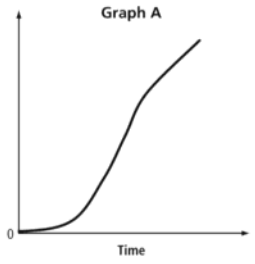
1. Match each scenario with its appropriate graph.

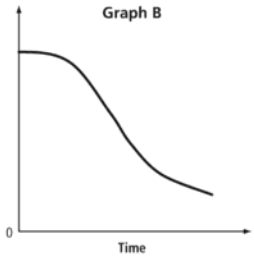
D the number of donuts sold in the first two minutes of a fundraiser

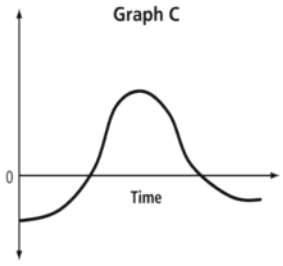
C the profit of a restaurant from the day it opens until it goes bankrupt

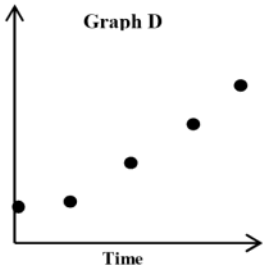
B the intensity of light as you move away from a light source

A the vertical growth of a rose



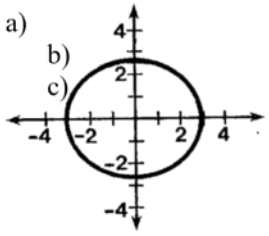



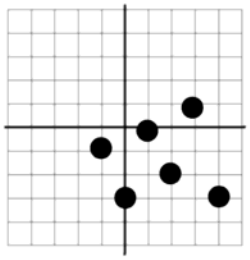



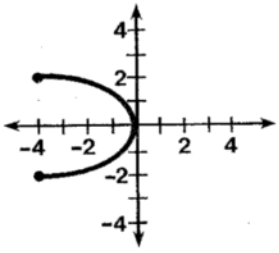




2. For each graph, identify the domain and range in the notation indicated.

a)
b)
c)






(a) interval notation

Domain: $[-3, 3]$

Range : $[-2.5, 2.5]$

(b) set notation

Domain: $\{x \mid -1 \le x \le 4, x \in \mathbb{Z}\}$ OR $\{x \mid x = -1, 0, 1, 2, 3, 4, x \in \mathbb{Z}\}$

Range: $\{y \mid -3 \le y \le 1, y \in \mathbb{Z}\}$ OR $\{y \mid y = -3, -2, -1, 0, 1, y \in \mathbb{Z}\}$

(c) set notation

Domain: $\{x \mid -4 \le x \le 0, x \in \mathbb{R}\}$

Range: $\{y \mid -2 \le y \le 2, y \in \mathbb{R}\}$

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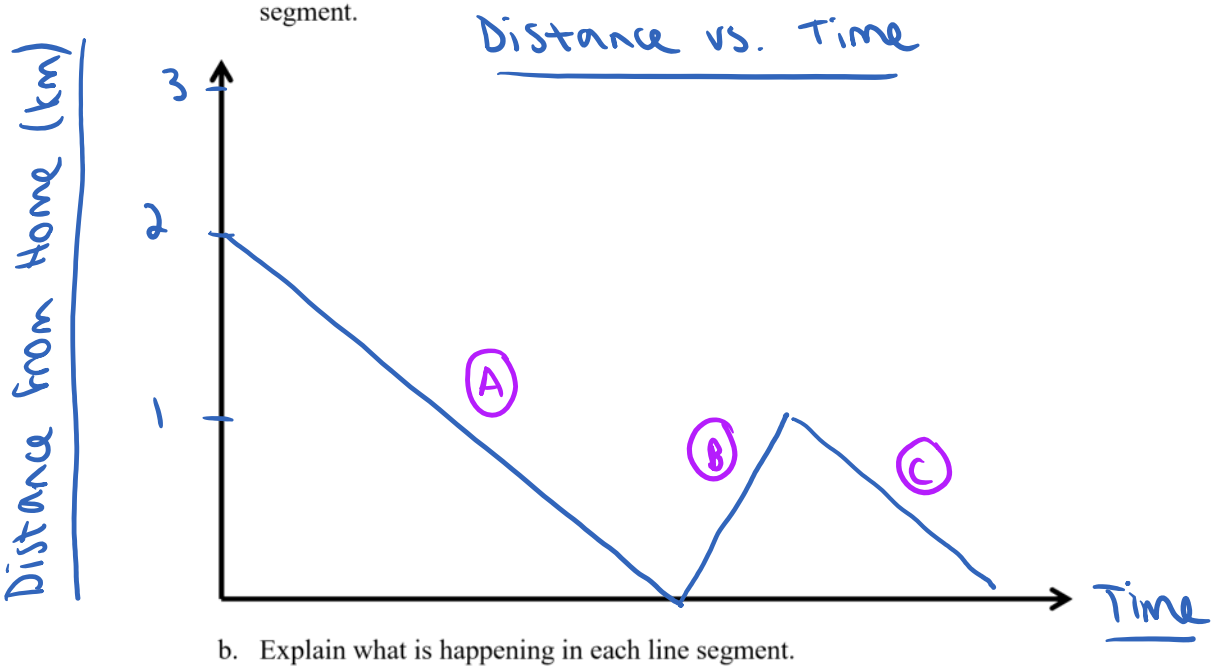
3. Sally leaves school and rides her bike 3 km to a pet shop to buy food for her dog. She passes her house on the way to the store. After buying the food, she rides 1 km to her house.

a. Sketch a graph of the distance from home versus time. Label your axes and each line segment.



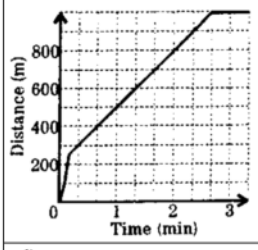
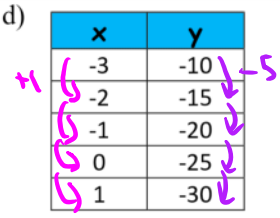

b. Explain what is happening in each line segment.

(A) Her school is 2km from her house, so she rides towards her home at a constant speed

(B) She passes her home (0 km from home), and rides 1 more km to the pet shop

(C) She rides home from the pet shop.

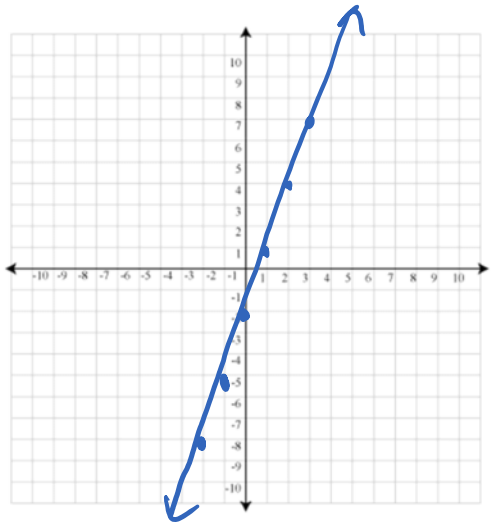
4. For each relation, state the dependent variable and the independent variable. Then, identify the relation as linear or non-linear.

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

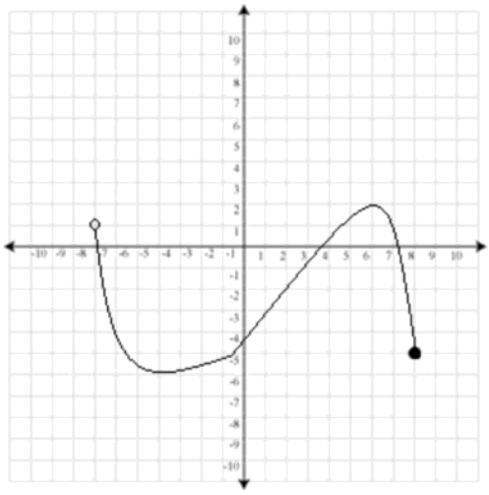
5. Fill out the table of values and graph the equation:

$$y = 3x - 2$$

| x | y |
|---|---|
| -2 | -8 |
| -1 | -5 |
| 0 | -2 |
| 1 | 1 |
| 2 | 4 |
| 3 | 7 |



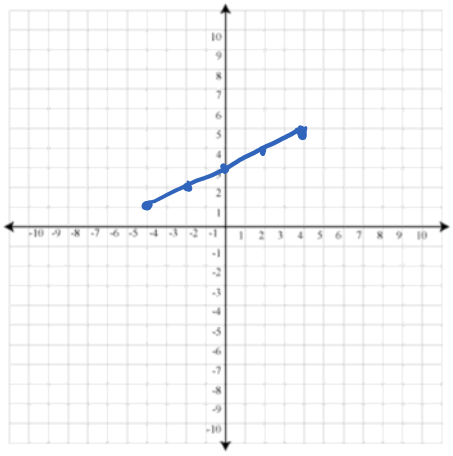
6. State the Domain and Range of the following graph in set notation:



Domain: $\{x \mid -7 < x \leq 8,\ x \in R\}$

Range: $\{y \mid -6 \leq y \leq 2,\ y \in R\}$

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



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

Domain: $-4 < x \leq 4$

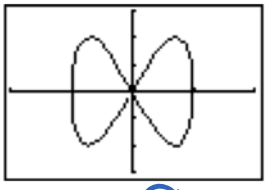
| x | y |
|---|---|
| -4 | 1 |
| -2 | 2 |
| 0 | 3 |
| 2 | 4 |
| 4 | 5 |

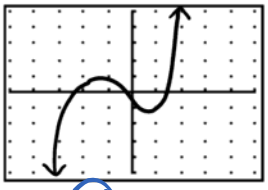
8. Determine if each relation is a function (F) or not (N). Circle your answer.

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

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

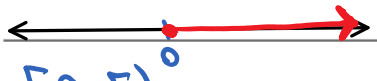
a) {(1, 2), (2, 3), (1, 4)}

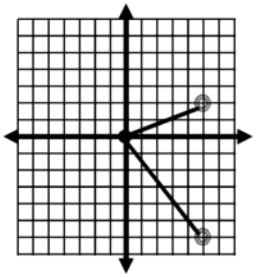
D: $\{x \mid x = 1, 2, x \in N\}$ (set notation)

R: $y = 2, 3, 4$ (as a list)

b) $y = x^2$

D: x is all real #s (words)

R:  (number line)

c) 

D: $[0, 5)$ (interval notation)

R: $\{y \mid -6 < y < 2, y \in R\}$ (set notation)

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

a. $f(-2)$ $f(-2) = 3(-2) + 7 = -6 + 7 = 1$

b. $f\left(\frac{1}{3}\right)$ $f\left(\frac{1}{3}\right) = 3\left(\frac{1}{3}\right) + 7 = 1 + 7 = 8$

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

$34 = 3x + 7$

$-7 \quad -7$

$\frac{37}{3} = \frac{3x}{3}$

$x = \frac{37}{3}$