

Writing Linear Equations:

$$y = mx + b$$

\downarrow slope (r.o.c per)
 \downarrow y-intercept (0, -) begin starting point

- ① Find the slope!
- ② Find the y-intercept
- ③ Create the Equation

Ex. 1: Write an equation to find the number of liters in any number of quarts. Describe the relationship in words.

SLOPE: $\frac{y_2 - y_1}{x_2 - x_1} = \frac{1.9 - 0.95}{2 - 1} = 0.95$

$$y = 0.95x + 0$$

$$l = 0.95q$$

0.95 liters per 1 quart

Quarts, q	Liters, l
0	0
1	0.95
2	1.9
3	2.85
4	3.8
5	4.75

-0.95
 +0.95
 +0.95
 +0.95

Ex. 2: About how many liters are in 8 quarts?

$$l = 0.95(8)$$

7.6 liters

The total cost of tickets to the school play is shown in the table.

Ex. 3: Write an equation to find the total cost of any number of tickets.

Describe the relationship in words.

SLOPE: $\frac{9 - 4.50}{2 - 1} = 4.50$ \$4.50 per 1 ticket

$$y = 4.5x + 0$$

Number of Tickets, t	Total Cost (\$), c
1	4.50
2	9.00
3	13.50
4	18.00

Ex. 4: Use the equation to find the cost of 15 tickets.

$$c = 4.5t$$

$$c = 4.5(15) = \$67.50$$

The total distance Marlon ran in one week is shown in the graph.

Ex. 5: Write an equation to find the number of miles run (y) after any number of days (x).

$$\text{SLOPE: } \frac{14 - 7}{4 - 2} = \frac{7}{2} = \frac{3.5 \text{ miles}}{1 \text{ day}}$$

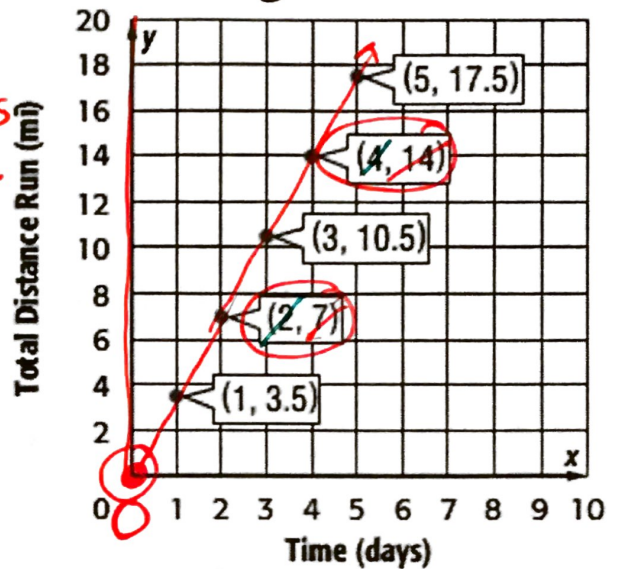
$$y = 3.5x + 0$$

Ex. 6: How many miles will Marlon run after 2 weeks? = 14 days

$$y = 3.5x$$

$$3.5(14)$$

$$\boxed{49 \text{ miles}}$$



Paul earns \$7.50 an hour working at a grocery store.

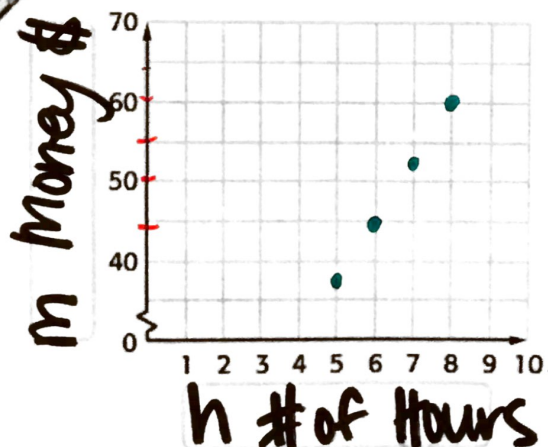
Ex. 7: Write an equation to find the amount of money Paul earned (m) for any number of hours (h).

$$y = 7.50x + 0$$

$$m = 7.50h$$

Ex. 8: Make a table to find his earning if he works 5, 6, 7, or 8 hours. Then graph the ordered pairs.

Hours	h	m
5	5(7.50)	37.50
6	6(7.50)	45
7	7(7.50)	52.50
8	8(7.50)	60

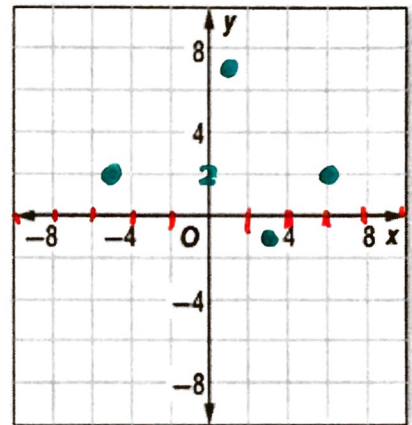


Vocabulary

- Relation: *How are x & y related to each other?*
- Domain: *$x \rightarrow$ inputs*
- Range: *$y \rightarrow$ outputs*

Ex. 9: Express the relation $\{(-5,2), (3,-1), (6,2), (1,7)\}$ as a table and a graph.

x	y
-5	2
3	-1
6	2
1	7



A movie rental store charges \$3.95 per movie rental.

Ex. 10: Make a table of ordered pairs in which the x -coordinate represents the number of movies rented and the y -coordinate represents the total cost for 1, 2, 3, or 4 movies.

x	y
1	3.95
2	7.90
3	11.85
4	15.80

Ex. 11: Graph the ordered pairs.

