

Get out your homework and have it ready to check.

Classwork - Relations (Domain and Range)

Representing Relationships

1. **PRODUCTION** A manufacturer produces 950 light bulbs per day.

- a. Write an equation to find the number of bulbs b the manufacturer makes in any number of days d .

Equation \rightarrow $b = 950d$

- b. Use the equation to determine how many bulbs the manufacturer will make in 25 days.

$$b = 950(25)$$

$$b = 23750 \text{ bulbs}$$

Days, d	Bulbs, b
1	950
2	1,900
3	2,850
4	3,800

2. **WATER** The workers at a plant drink 38 gallons of water per day.

- a. Write an equation to find the number of gallons g the workers drink in any number of days d .

Equation \rightarrow $g = 38d$

- b. Use the equation to determine how many gallons of water the workers will drink in 30 days.

$$g = 38(30)$$

$$g = 1140 \text{ gallons}$$

Days, d	Gallons, g
1	38
2	76
3	114
4	152

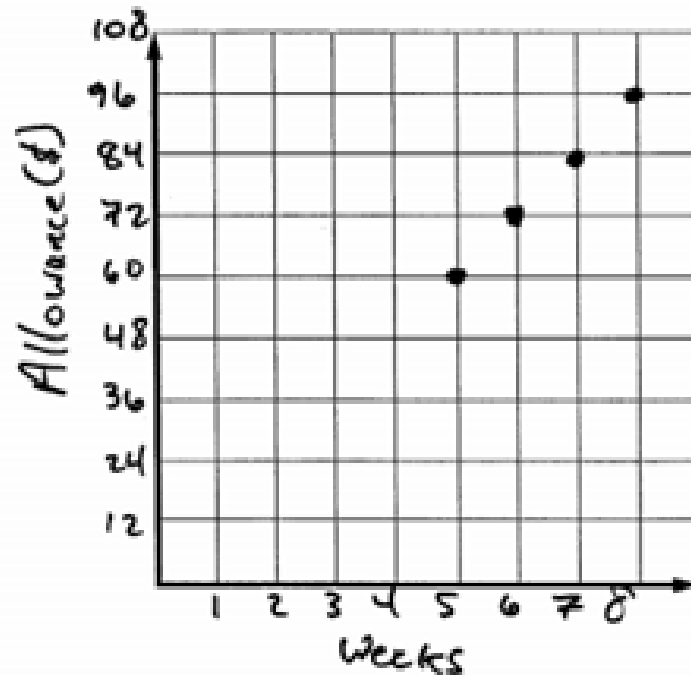
3. ALLOWANCE Chet gets \$12 per week as allowance.

- a. Write an equation to find the amount of allowance a Chet receives in any number of weeks w .

Equation \rightarrow $a = 12w$

- b. Make a table to find the amount of allowance Chet receives in 5, 6, 7, or 8 weeks. Then graph the ordered pairs.

Weeks, w	Allowance, a
5	60
6	72
7	84
8	96



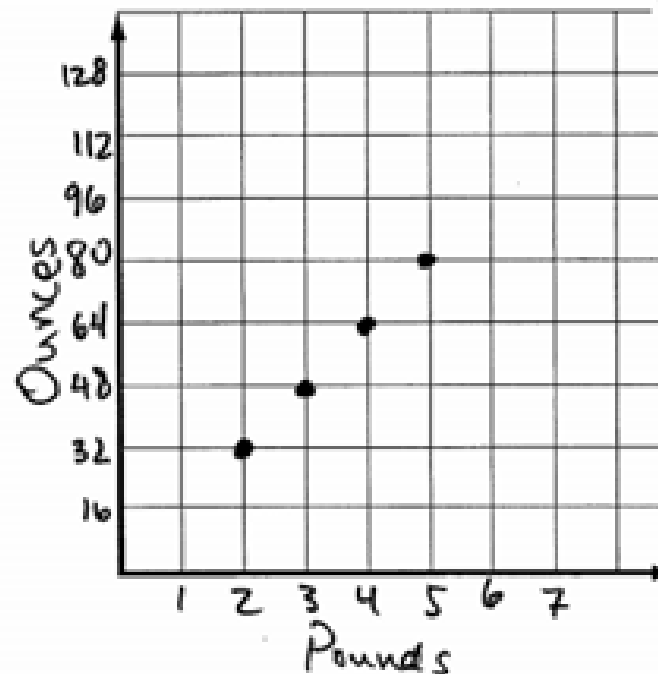
4. MEASUREMENT There are 16 ounces in a pound.

- a. Write an equation to find the number of ounces n in any number of pounds p .

Equation \rightarrow $n = 16p$

- b. Make a table to find the number of ounces in 2, 3, 4, or 5 pounds. Then graph the ordered pairs.

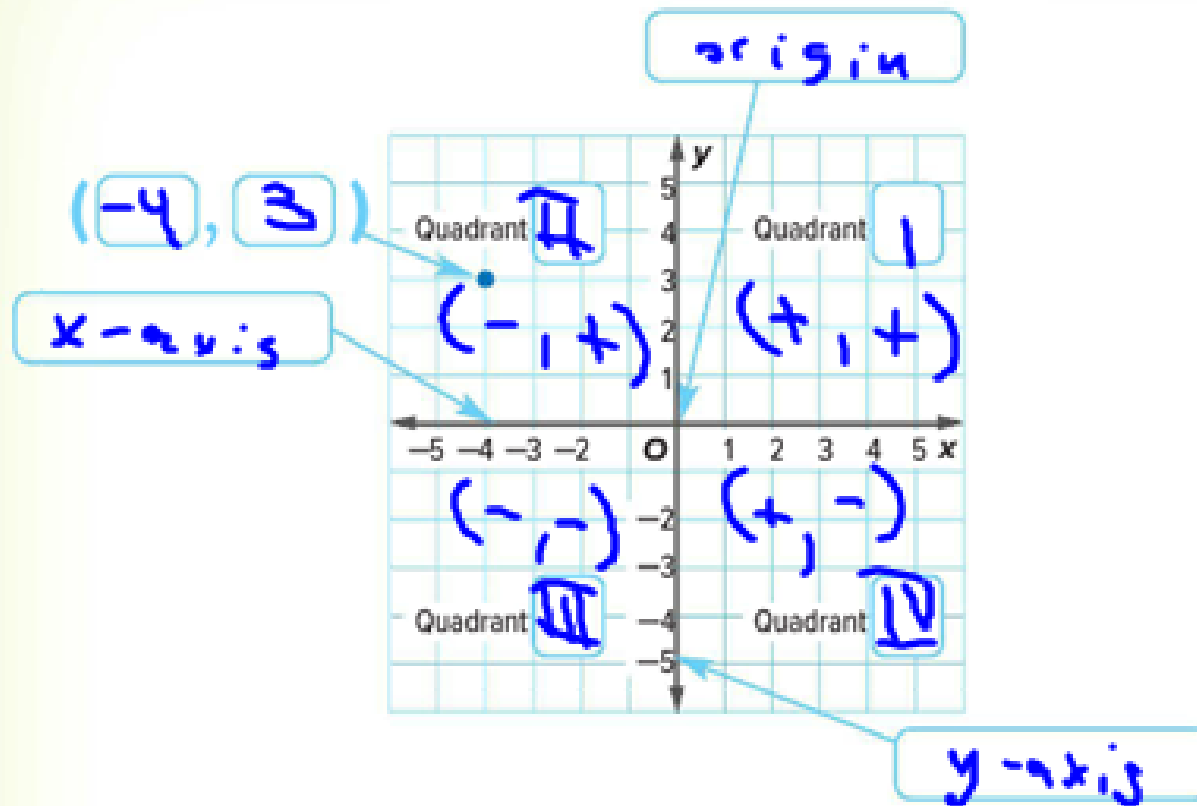
Pounds, p	Ounces, n
2	32
3	48
4	64
5	80



Vocabulary Start-Up



Complete the graphic organizer of the coordinate plane below.



Identify the x-coordinate in the point $(-5, -7)$.

-5

Relations

Ordered Pairs

$(-2, 3)$
 $(1, 2)$
 $(0, -1)$
 $(3, 1)$

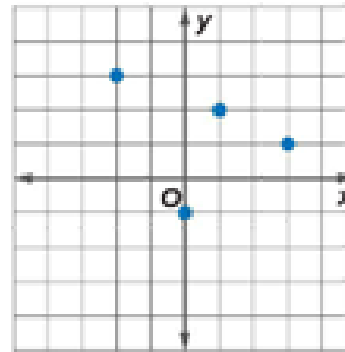
The domain is
 $\{-2, 1, 0, 3\}$.

The range is
 $\{3, 2, -1, 1\}$.

Table

x	y
-2	3
1	2
0	-1
3	1

Graph



A **relation** is any set of ordered pairs. Relations can be represented as a table and as a graph. The **domain** of the relation is the set of x -coordinates. The **range** of the relation is the set of y -coordinates.

Domain = x -coordinates
Range = y -coordinates

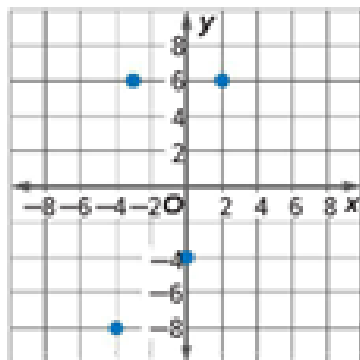
Example

- Express the relation $\{(2, 6), (-4, -8), (-3, 6), (0, -4)\}$ as a table and a graph. Then state the domain and range.

Place the ordered pairs in a table with x -coordinates in the first column and the y -coordinates in the second column.

x	y
2	6
-4	-8
-3	6
0	-4

Graph the ordered pairs on a coordinate plane.



* Numerical Order

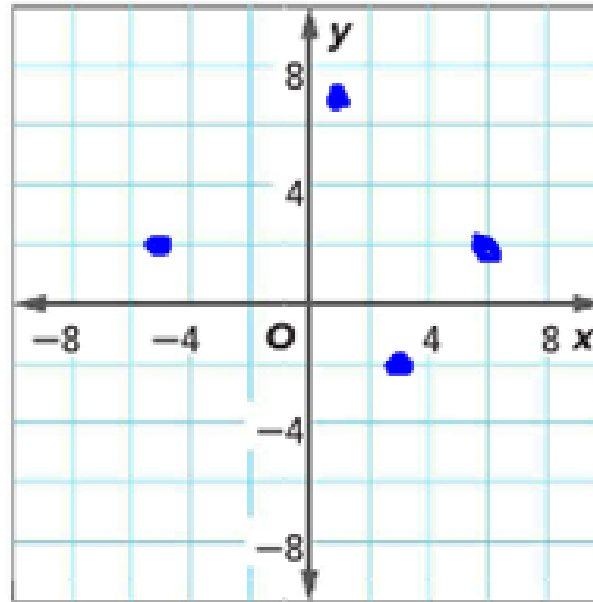
The domain is $\{-4, -3, 0, 2\}$. The range is $\{-8, -4, 6\}$.

Got it? Do this problem to find out.

- a. Express the relation $\{(-5, 2), (3, -1), (6, 2), (1, 7)\}$ as a table and a graph. Then state the domain and range.

Domain

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



Domain: $\{-5, 1, 3, 6\}$

Range: $\{-1, 2, 7\}$



Example



$$y = 3x$$

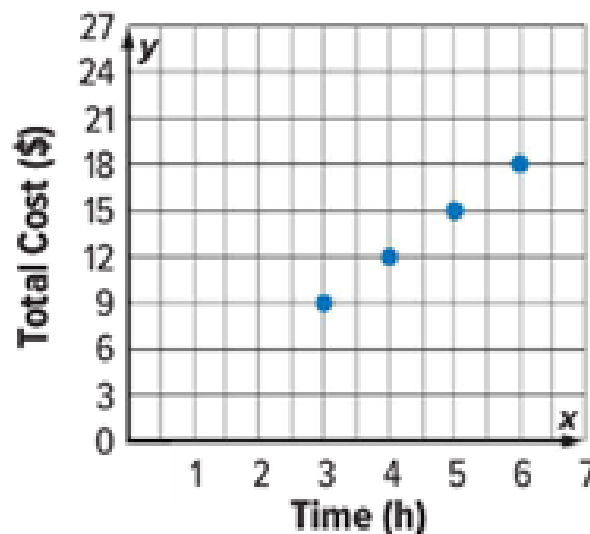
2. It costs \$3 per hour to park at the Wild Wood Amusement Park.

- a. Make a table of ordered pairs in which the x -coordinate represents the hours and the y -coordinate represents the total cost for 3, 4, 5, and 6 hours.

x	y
3	9
4	12
5	15
6	18

$(3, 9)$
 $(4, 12)$

- b. Graph the ordered pairs.



Got it? Do these problems to find out.

$$y = 3.95x$$

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

- b. 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.
- c. Graph the ordered pairs.

Iv DV

x	y
1	3.95
2	7.90
3	11.85
4	15.80

