- For each of the following examples, identify the variables (x = _____ ; y = _____)
- Write the equation mathematically using the variables.
- Make a table of values
- Draw the graph of the equation that describes the situation.
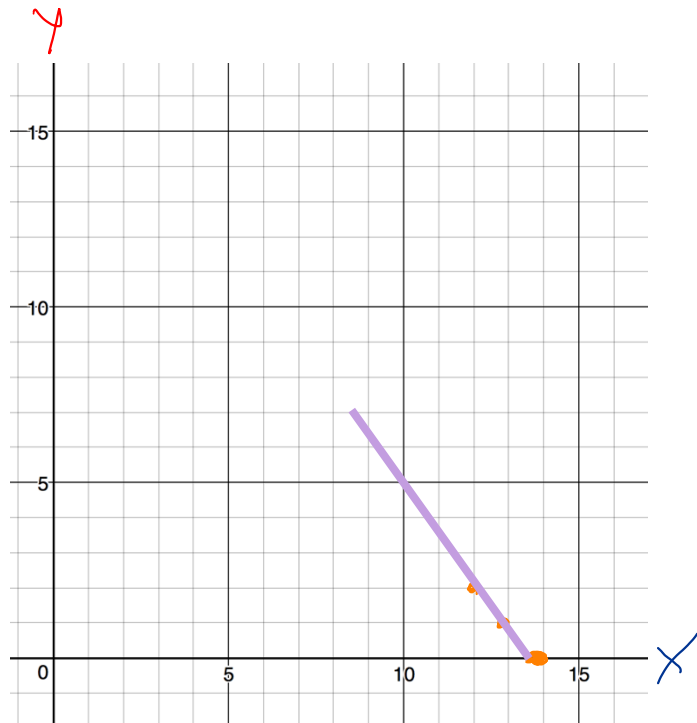- Make a prediction

Simple Total:

Ex. Rey goes to Tim Hortons to pick up muffins and donuts for her teachers.
She buys a total of 14 snacks.

$$X = muffins$$
$$Y = donuts$$

$$X + Y = 14$$

X	Y
14	0
13	1
12	2
11	3

Question: If Rey buys 11 muffins, how many donuts will she buy?

Answer: Rey will buy ____*3*____ donuts.

Complex Total

Ex. Adam went to the grocery store to buy hot dogs and frozen hamburger patties.
He bought 10 hot dogs and 12 hamburgers.
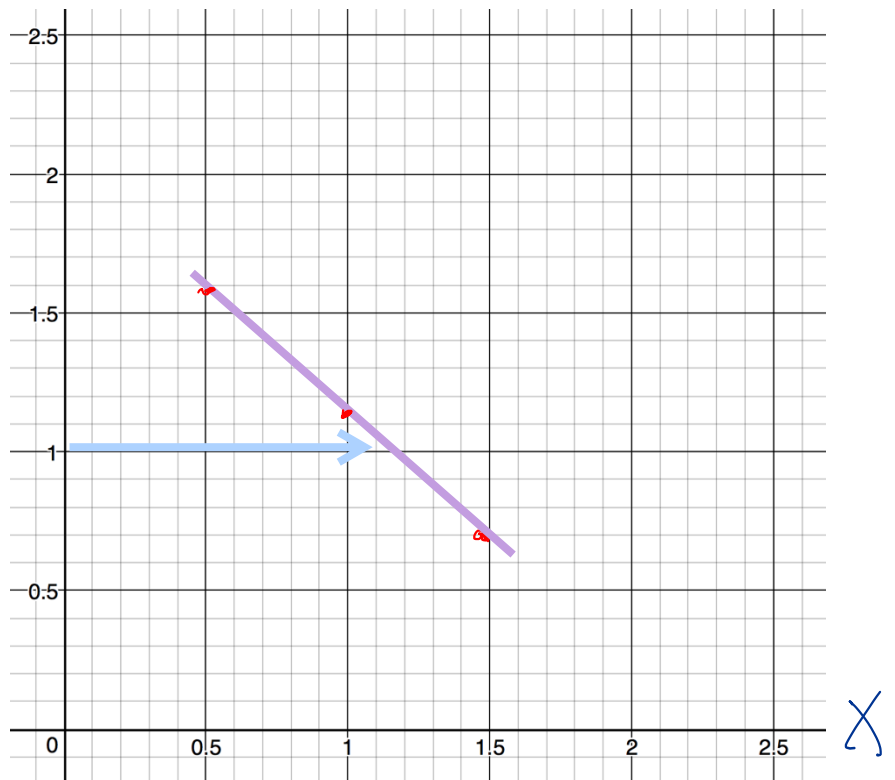The total cost of his grocery order was $ 24.

X = price of hot dog

Y = price of hamburger

(amount of hd) (cost of hd) + (amount of ham) (cost of ham) = 24

$10x + 12y = 24$

X	Y
0.5	1.58
1	1.16
1.5	0.75

$10x + 12y = 24$

$-10x \qquad \sim 10x$

$\dfrac{12y}{12} = \dfrac{-10x}{12} + \dfrac{24}{12}$

$y = \sim 0.8\overline{3}x + 2$

$y = -0.8\overline{3}(0.5) + 2$

$y = -0.41\overline{6} + 2$

$y = 1.58$

Question: If a hamburger costs $ 1.00, how much will a hot dog cost?
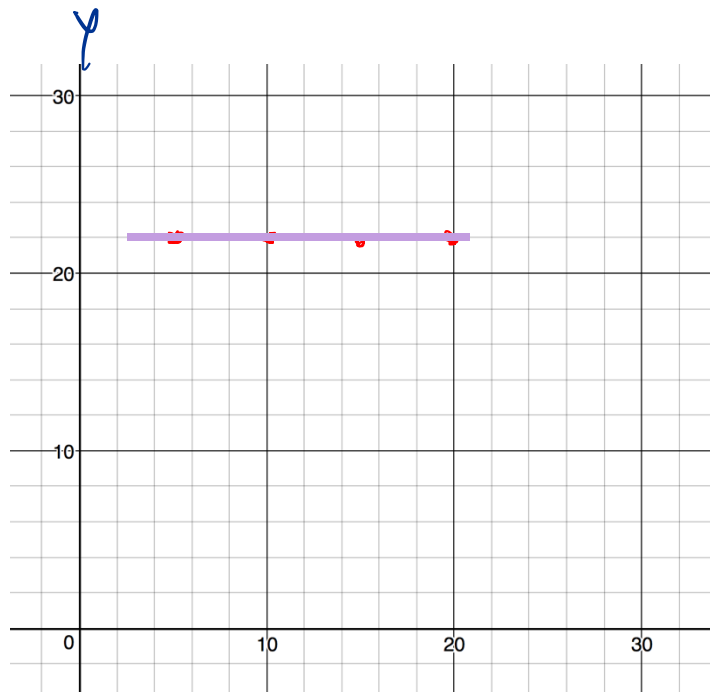
Answer: A hot dog will cost $ __1.20__ .
Smiley Face Lines

Ex.   Tesla makes two types of cars, the Model X and the Model S.
        No matter how many Model X cars they make, they produce 22 000 model S cars.

$X = model X$

$y = model S$

X	y
5000	22 000
10 000	22 000
15 000	22 000
20 000	22 000

$Y = 22 000$

Question: If Tesla makes 13 200 model X cars, how many Model S cars will they make?

Answer: Tesla will make ___22 000___ Model S cars..
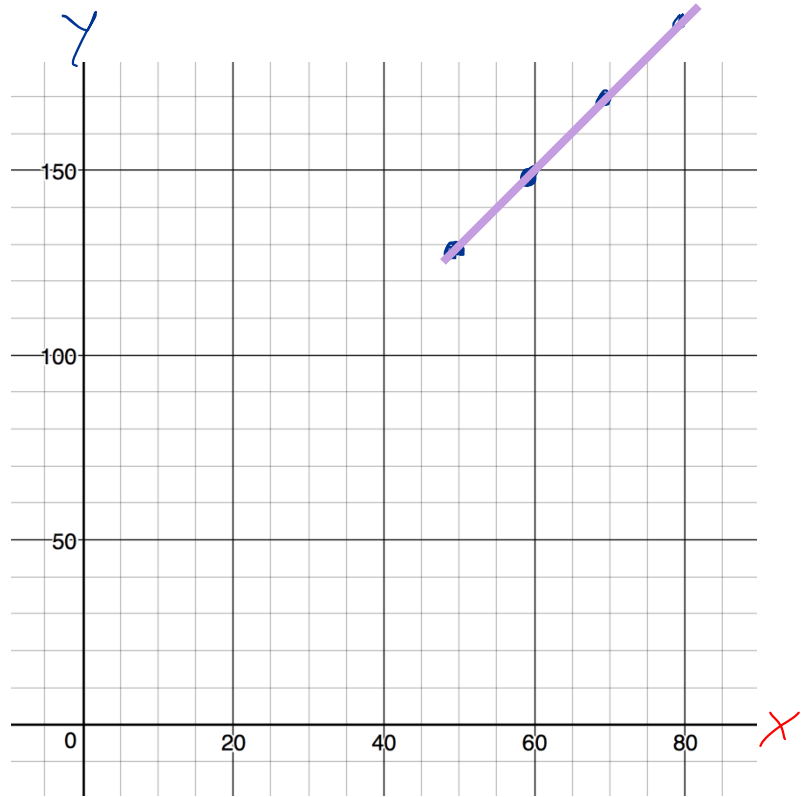
Comparing Two Variables

Ex.   Janine and Erin compare their bank account balances.
        Erin has 30 more than twice as much as Janine.

Janine = X

Erin = Y

$y = 2x + 30$

X	Y
50	130
60	150
70	170
80	190

$y = 2x + 30$
$y = 2(50) + 30$
$y = 100 + 30$
$y = 130$

$y = 2x + 30$
$y = 2(60) + 30$
$y = 120 + 30$
$y = 150$

Question: If Erin has $ 380 in her account, how much will Janine have in hers?

$= y$

Answer: Janine should have $ ___175___ in her account.

$y = 2x + 30$
$380 = 2x + 30$
$-30 \quad\quad -30$
$\frac{350}{2} = \frac{2x}{2}$
$175 = x$