

POPULATION

<p style="text-align: center;">Verbal Description</p> <p>Suppose a town has a population of 5,000 residents but that the population is decreasing by 200 people each year.</p> <p>Slope: $\frac{-200 \text{ People}}{1 \text{ year}}$</p> <p>Y-intercept: 0 Years 5,000 People</p> <p>X-intercept: 25 Years 0 People</p>	<p style="text-align: center;">Define your Variables</p> <p>Independent: <u>years</u></p> <p>Dependent: <u>people</u></p> <p style="text-align: center;">Write an Equation:</p> <p style="text-align: center;">$y = mx + b$</p> <p style="text-align: center;">Y = -200X + 5000</p> <p style="text-align: center;">$y = -200x + 5,000$</p>
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<p style="text-align: center;">Table of Values</p> <table border="1" style="margin: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;"><u>years</u></th> <th style="padding: 5px;"><u>people</u></th> </tr> <tr> <th style="padding: 5px;">X</th> <th style="padding: 5px;">Y</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">0</td> <td style="padding: 5px;">5,000</td> </tr> <tr> <td style="padding: 5px;">25</td> <td style="padding: 5px;">0</td> </tr> <tr> <td style="padding: 5px;">5</td> <td style="padding: 5px;">4,000</td> </tr> <tr> <td style="padding: 5px;">10</td> <td style="padding: 5px;">3,000</td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 10px;">Points to Graph:</p> <p style="text-align: center; margin-top: 10px;">$(0, 5000)$ $(25, 0)$</p> <p style="text-align: center; margin-top: 10px;">$(5, 4000)$ $(10, 3000)$</p>	<u>years</u>	<u>people</u>	X	Y	0	5,000	25	0	5	4,000	10	3,000	<p style="text-align: center;">Graph</p> <p style="text-align: center; margin-top: 10px;"><u>years</u></p> <p style="text-align: center;">**Label your Axis**</p>
<u>years</u>	<u>people</u>												
X	Y												
0	5,000												
25	0												
5	4,000												
10	3,000												

T-SHIRT SHOP

Verbal Description

Your new job is at the Custom T Shop, where T-shirts are printed to order. For each order, Custom T Shop charges \$8.00 per shirt plus a onetime set up fee of \$15.00

Find the following and explain what they mean.

Slope: $\frac{31-23}{2-1} = \frac{8}{1} = \8 per 1 shirt

Y-intercept: 0 shirts
\$15 cost

X-intercept: $-\frac{15}{8}$ shirts
0 cost.

Define your Variables

Independent: Number of T-Shirts

Dependent: Total Cost for Customers

Write an Equation:

$$y = mx + b$$

$$y = 8x + 15$$

Table of Values

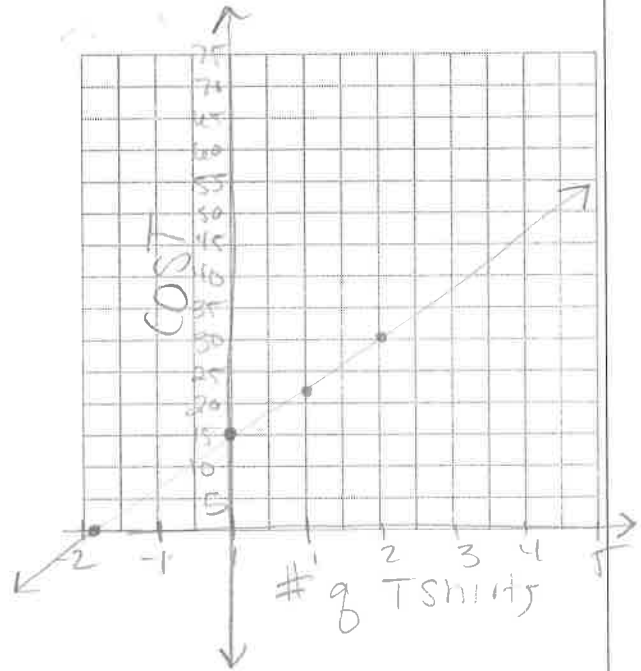
# of T-shirts	COST
X	Y
0	15
$-\frac{15}{8}$	0
1	23
2	31

Points to Graph:

$(0, 15)$ $(-\frac{15}{8}, 0)$

$(1, 23)$ $(2, 31)$

Graph



Label your Axis

$0 = 8x + 15$
 $-15 = 8x$
 $-\frac{15}{8} = x$
 $x = -\frac{15}{8}$

PLUMBER

Verbal Description

When a plumber is called, the cost of the service call is \$50 for him to show up at your house, plus an additional \$25 per hour.

Find the following and explain what they mean.

Slope: $\frac{25}{1} = \$25 \text{ per 1 hour}$

Y-intercept: 0 hours
\$50

X-intercept: -2 hours worked
0 total price

Define your Variables

Independent: Hours worked

Dependent: Total Price

Equation:

$$y = mx + b$$

$$y = \underline{25x + 50}$$

Table of Values

Hours Worked	Total Price
X	Y
0	50
1	75
2	100
3	125

10
75
50

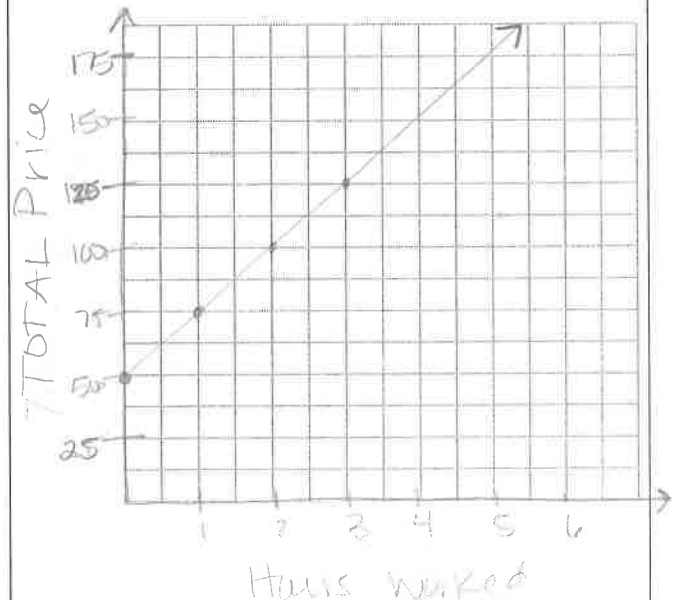
25
25
25

Points to Graph:

$(0, 50)$ $(1, 75)$

$(2, 100)$ $(3, 125)$

Graph



****Label your Axis****

CELL PHONE CHARGES

Verbal Description

Your cell phone company charges \$20 a month plus \$0.50 per text message.

Find the following and explain what they mean.

Slope: $\frac{5}{10} = \frac{1}{2} = \$1 \text{ per } 2 \text{ text messages}$

Y-intercept: 0 text messages
\$20

X-intercept: -40 text messages
\$0

Define your Variables

Independent: text messages

Dependent: Total price

Write an Equation:
 $y = mx + b$

$y = \frac{1}{2}x + 20$

Table of Values

X	Y
0	20
10	25
20	30
30	35

$\left. \begin{matrix} +10 \\ +10 \\ +5 \end{matrix} \right\} \begin{matrix} +5 \\ +5 \\ +5 \end{matrix}$

Points to Graph:

(0, 20) (10, 25)

(20, 30) (30, 35)

