

(month, # employees)

1. The first month a company was open, it had 2 employees. At the end of 6 months, the company had 10 employees. If the number of employees increases at a steady rate, write an equation that illustrates this situation.

(1, 2)
(6, 10)

$$m = \frac{10-2}{6-1} = \frac{8}{5}$$

$$y - 2 = \frac{8}{5}(x - 1)$$

How many people will be employed by the company after one year? 19 to 20

$$y - 2 = \frac{8}{5}(12 - 1)$$

$$y - 2 = 17.6$$

$$y = 19.6$$

2. Mike and Megan turn on the family oven to bake cookies for their Christmas party. They notice the following readings on the oven control panel:

After 2 minutes the oven has reached 180°F.

After 4 minutes the reading is 290°F.

(2, 180)

(4, 290)

(min, °F)

- (a) At what ~~rate~~ ^{Slope} is the temperature changing?

55° per min

- (b) Write an equation that relates time (m) and temperature (T).

$$y - 180 = 55(x - 2)$$

$$55x - 110$$

$$y = 55x + 70$$

- (c) What do you think the 70 in the equation tells us?

70° when turn oven on.

- (d) How long will it take for the temperature to reach 350 degrees?

$$350 = 55x + 70$$

$$280 = 55x$$

5.1 minutes

- 3.) Key Club hosted a fundraising event where the profit they made depends on the number of people. If 100 people attend they make \$2500. If 80 people attend they make \$1500.

Define Variables:

x = # of people

y = profit

Write Equation:

$$y - 1500 = 50(x - 80)$$

$$y = 50x - 2500$$

(100, 2500)
(80, 1500) m = 50

\$50 per person

- a.) What is the y-intercept? -2500

- b.) What does it mean if they y-intercept is negative?

If no one comes to event, lose \$.