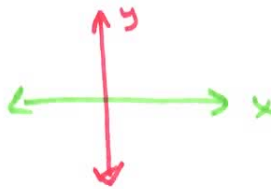


**Warm Up Section 7.25**



1) The softball team is having a fundraiser. They are charging \$15 for a ticket for a spaghetti dinner. The dinner costs the softball team \$300.

a) What are the independent and dependent variables?

$x = \# \text{ tickets}$

$y = \text{profit}$

b) What's the rate of change?

$\frac{\$15}{\text{ticket}}$

c) What's the value of the initial dependent variable?  $-\$300$  (expense)

d) Write a linear equation that gives the profit/loss for this fundraiser.

$y$

$y = -300 + 15x$

e) How many tickets will the softball team need to sell in order to make a profit of \$500?

$500 = -300 + 15x$   
 $+300 \quad +300$

$800 = 15x$   
 $\frac{800}{15} = \frac{15x}{15}$

$x = 53.3 \approx \boxed{54 \text{ tickets}}$

f) How many tickets will the softball team need to sell in order to break even?

$0 = -300 + 15x$   
 $300 = 15x$

$x = 20 \text{ tickets}$

2) You work at an assembly line that manufactures computer chips. You arrive at work to find a stock of 25 chips. The chips are produced at a constant rate of 4 chips per hour.

a) What are the independent and dependent variables?

$x = \# \text{ hours}$

$y = \# \text{ chips}$

b) What's the rate of change?

$\frac{4 \text{ chips}}{\text{hour}}$

c) What's the value of the initial dependent variable?

$25 \text{ chips}$

d) Write a linear equation for this function.

$y = 25 + 4x$

e) How many chips will there be after you have been at work for 3.5 hours?

$y = 25 + 4(3.5) = 25 + 14 = \boxed{39 \text{ chips}}$

f) How many hours have you worked when there 50 chips?

$50 = 25 + 4x$   
 $-25 \quad -25$

$25 = 4x$   
 $\frac{25}{4} = \frac{4x}{4}$

$\boxed{6.25 \text{ hours}} = x$