P. 12-13 Writing Linear Equations 1.3

Warm-up: Read the situation below. P. 12

Keith wants to sell pizza for $1.25 per slice.
He will buy the pizza for $0.75 per slice.
He must pay $20.00 for a booth rental fee for a place to sell.

Q. (with a partner) If Keith sells 24 slices, does he make a profit or a loss?

Consider the following... P. 12

What is Keith's profit for each slice of pizza?

$.50

What is Keith's "fixed" cost?

$20

If he sells 24 slices...

Profit

$12 - $20 = -$8

Loss

What if Keith sells 45 slices of pizza? Would there be a profit or a loss? What is the profit or loss?

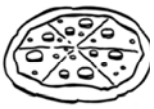
P. 12

$45 \cdot (.5) = \$22.50$

-20

$\$2.50$ profit

Keith wants to sell pizza at the Flea Market. He plans to buy pizza for $0.75 per slice, and sell it for $1.25 per slice. He must pay a $20.00 flat fee for the booth rental.



P. 13

a) Write a linear equation that can be used to determine Keith's profit, y, for selling any number of pizzas, x.

$y = .5x - 20$

Use the equation from part (a) to answer the following:

P. 13

b) If Keith sells 63 pizza slices, what is his profit? (Use the equation from above!)

$y = .5(63) - 20$

$y = \$11.50$

c) How many slices of pizza must Keith sell to make a profit of $36.50?

$36.50 = .5x - 20$

$+20 \qquad +20$

$56.50 = .5x$

$\frac{56.50}{.5} = \frac{.5x}{.5}$

$113 = x$

You want to start saving money. You have $280 in a bank account and plan on depositing $80 into your account at the end of each month.

a) Write a linear equation that can be used to determine how much you will have saved up, y, after any given month, x.

$y = 280 + 80x$

P. 13

Use the equation from part (a) to answer the following:

P. 13

b) If the deposit pattern continues, how much money is in the account at the end of 10 months?

$y = 280 + 80(10)$

$y = \$1,080$

c) After how many months will you have saved up $2,200?

$2200 = 280 + 80x$

$-280 \quad -280$

$1920 = 80x$

$24 = x$

Closing Question

P. 12

Tim buys a new computer for his office for $1200. The computer depreciates (LOSES VALUE) by $150 each year.

a) Write a linear equation in to model the value of the computer, v, after any given number of years, y.

$V = 1200 - 150y$

b) Find the value of the computer after 5 years.

$V = 1200 - 150(5)$

$V = \$450$

Homework - Writing Linear Equations WS

DUE TOMORROW