Algebra 1 ECA Remediation Lesson 5

Solving Word Problems Involving Linear Inequalities

What to look for...

1. Create an inequality that looks like **y = mx + b**
2. Slope = m, looks like anything that happens repeatedly
3. y – intercept = b, look for anything that happens only once, or is an initial value
4. When picking which direction to point the inequality symbol, always point the inequality symbol at the value that you want to be smaller.

Solve each Inequality.

1. Sherrie bought 4 apples for $3.04. Each apple costs the same amount of money.

a. Write an inequality that can be used to find the maximum number of apples Sherrie can buy with $12.00.

a = price of 1 apple
x = # of apples bought

$\frac{4a}{4} = \frac{\$3.04}{4}$ $a = \$0.76$

$0.76x \leq 12.00$

OR

$\frac{4a}{3.04} \geq \frac{x}{12.00}$ $\frac{48a}{3.04} \geq \frac{3.04x}{3.04}$ $15.789 \geq x$

b. What is the maximum number of apples Sherrie can buy with $12.00?

$\frac{0.76x}{0.76} \leq \frac{12.00}{0.76}$ $x \leq 15.789$

Sherrie can buy 15 apples at most

2. Sam works at a car dealership. He earns $600 every 2 weeks plus $550 for every car that he sells.

a. Write an inequality that can be used to determine the number of cars Sam must sell in two weeks if he wants to earn a minimum of $2500 for that two weeks.

$\$600$ every 2wks
+550 per car

$2500 \leq 600 + 550c$

c = # of cars sold in 2wks.

b. What is the minimum number of cars Sam must sell in two weeks to earn a bi-weekly salary of $2500?

$2500 \leq 600 + 550c$
$-600 \quad -600$
$1900 \leq 550c$

$\frac{1900}{550} \leq \frac{550c}{550}$ $3.45 \leq c$

Sam needs to sell 4 cars

3. Paula sells Banana Bread. The cost for Paula to buy the ingredients for one loaf of bread is $2.27. Paula also pays $125 each month to rent the ovens she needs to cook the bread. Paula sells each loaf of Banana Bread for $9.50.

a. Write an inequality that can be used to determine the minimum number of loaves of bread Paula must sell each month in order to make a profit for the month.

$\$2.27$ per loaf Ingredients
$\$125$ → ovens
$\$9.50$ → Sale Price

b = # of loaves of bread

$2.27b + 125 < 9.50b$

b. What is the minimum number of loaves of Banana Bread that Paula must sell in order to make a profit in a given month?

$2.27b + 125 < 9.50b$
$-2.27b \quad -2.27b$

$\frac{125}{7.23} < \frac{7.23b}{7.23}$

$17.29 < b$

Paula needs to sell 18 or more loaves in order to make a profit.