1.2A Writing Equations and Inequalities

Section 1.2A

An inequality is used when we don't know exactly what an expression is equal to. Instead of an equals sign, we can use one of these symbols:

> **greater than... more than...**
< **less than...**
≤ **less than or equal to... not more than...**
≥ **greater than or equal to... at least...**

It takes practice to translate a word problem into an equation or an inequality. Let's practice now.

1) Celia and Juniper want to donate some money to a local food pantry.

To raise funds, they are selling necklaces and earrings.

→ Necklaces cost $8

→ Earrings cost $5

Create several purchase situations and calculate the total cost of that purchase.

How many... Necklaces	How many... Earrings	Calculation	Cost
1	2	$8(1) + 5(2) = 18$	$18
4	7	$8(4) + 5(7) = 69$	$67
2	1	$8(2) + 5(1) = 21$	$21

a) What quantities (concept) are changing (other than the total cost)? These are the variables for this problem. Define your variables.

x: necklaces
y: earrings

$$\begin{array}{r} 32 \\ + 35 \\ \hline 67 \end{array}$$

2) Suppose Celia and Juniper want to donate exactly $100.

  a) Write an equation or inequality for the situation.

$$8x + 5y = 100$$

  b) Graph the situation. Pay attention as to whether you are working with an equation (a simple boundary line) or an inequality (a boundary line and a half-plane of additional solutions).

x	y
12.5	0
0	20

$$8x + 5(0) = 100$$
$$8(0) + 5y = 100$$

3) Suppose Celia and Juniper **do not** reach their goal.
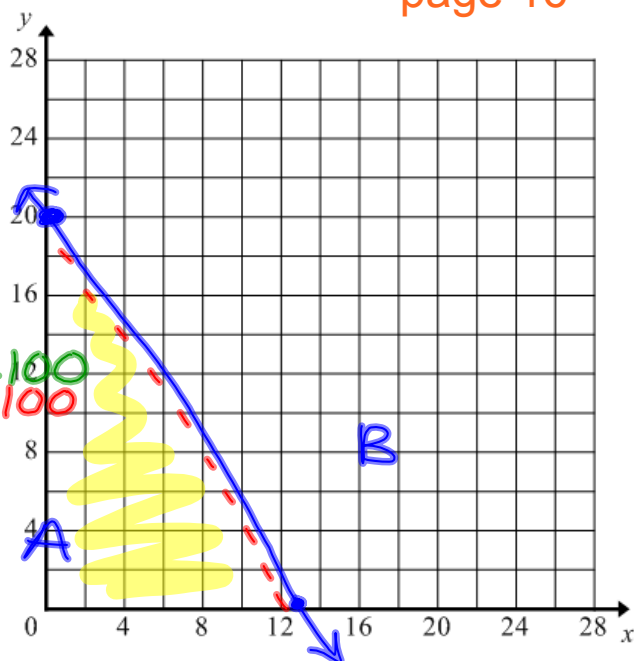
  a) On the graph, where are the points that represent the situation of them not reaching their goal of raising $100 or more?

  made less than $100

  b) Write an inequality that describes this situation.

$$8x + 5y < 100$$

  *dashed line

HOMEWORK TONIGHT:

1.2A: 3-9 (P-18)

Unit 1 Part A Test

Remember to show your work!!!

⭐ y = mx + b

m =

b =

⭐

x	y
	0
0	