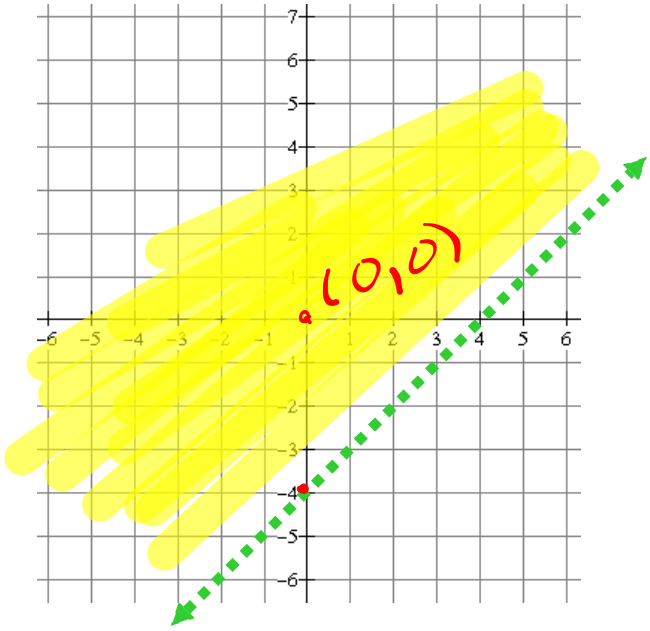
Feb. 4, 2020

Write the following inequalities:



$m = \frac{4}{4} = 1 \quad b = -4$

$y = x - 4$

$\boxed{y > x - 4}$

$0 > 0 - 4?$ ✓

Write the following inequalities:

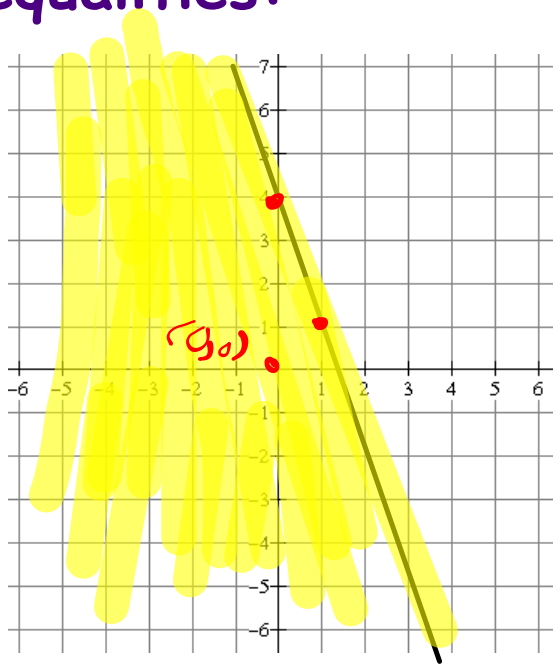
$m = -\frac{3}{1}$ $b = 4$

$y = -3x + 4$

$y \leq -3x + 4$

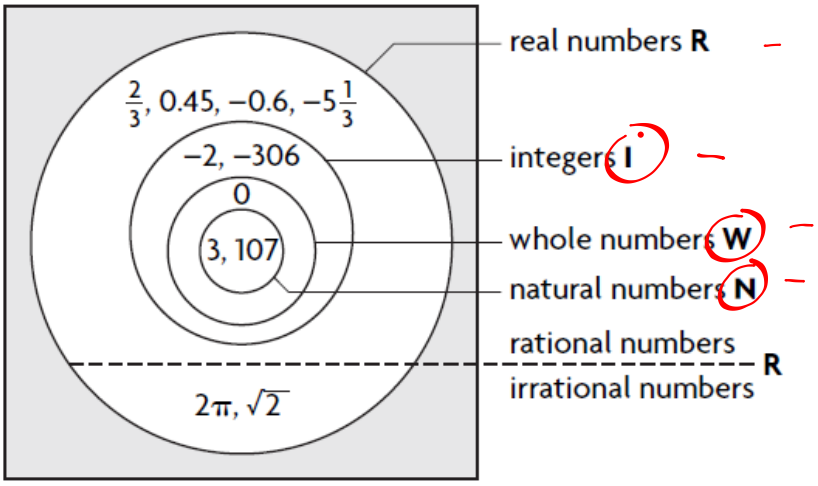
$0 \leq -3(0) + 4$?

$0 \leq 4$ ✓



Recall.....

The different numbers systems:



$0.45 = \frac{45}{100}$

2. Give an example of an ordered pair that could be in each solution set.

a) $\{(x, y) \mid x \in \mathrm{I}, y \in \mathrm{I}\}$

c) $\{(k, j) \mid k \in \mathrm{N}, j \in \mathrm{N}\}$

b) $\{(m, p) \mid m \in \mathrm{R}, p \in \mathrm{R}\}$

d) $\{(x, y) \mid x \geq 0, x \in \mathrm{R}, y \geq 0, y \in \mathrm{R}\}$

(-3, 6) (-2, 4) (1, 2) (3, 4)

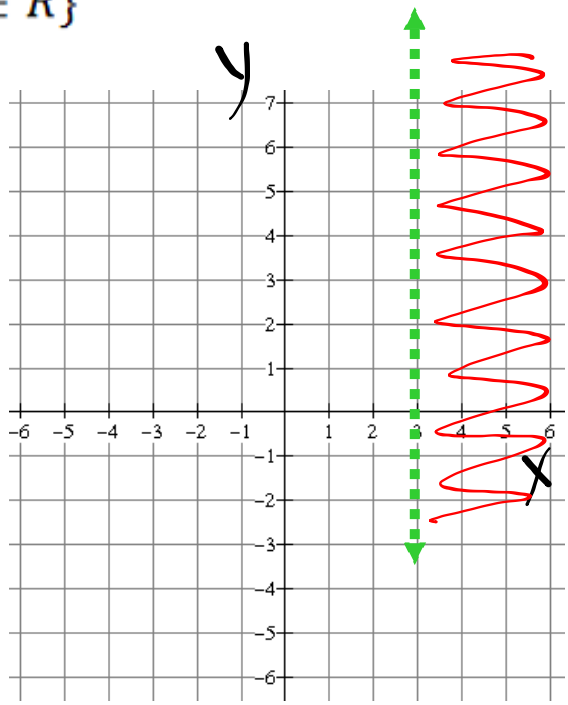
$(\frac{4}{2}, -3.1)$ $(\frac{4}{2}, +3.1)$

EXAMPLE 2 Graphing linear inequalities with vertical or horizontal boundaries Feb. 4, 2020

a) $\{(x, y) \quad x - 3 > 0, x \in R, y \in R\}$

$x - 3 > 0$

$x > 3$



Continuous data:

Data represented by real numbers (fractions, decimals, integers)

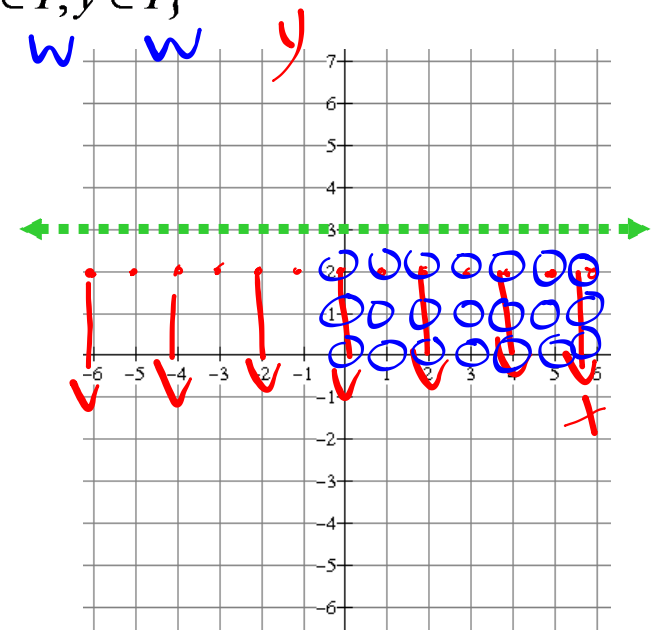
EXAMPLE 2 Graphing linear inequalities with vertical or horizontal boundaries

b) $\{(x, y) | -3y + 9 > -3 + y, x \in I, y \in I\}$

$-4y > -12$

$\frac{-4y}{-4} > \frac{-12}{-4}$

$y < 3$



Discrete data:

Cannot be connected data; not including all real numbers (R)

Optimization Application Problems – Essential Skills Feb. 4, 2020

Example 1

Amir owns a health-food store. He is making a mixture of nuts and raisins to sell in bulk. His supplier charges $25/kg for nuts and $8/kg for raisins

Question: What quantities of nuts and raisins can Amir mix together if he wants to spend less than $200 to make the mixture?

Step 1: Define your variables

x: kg of nuts

y: kg of raisins

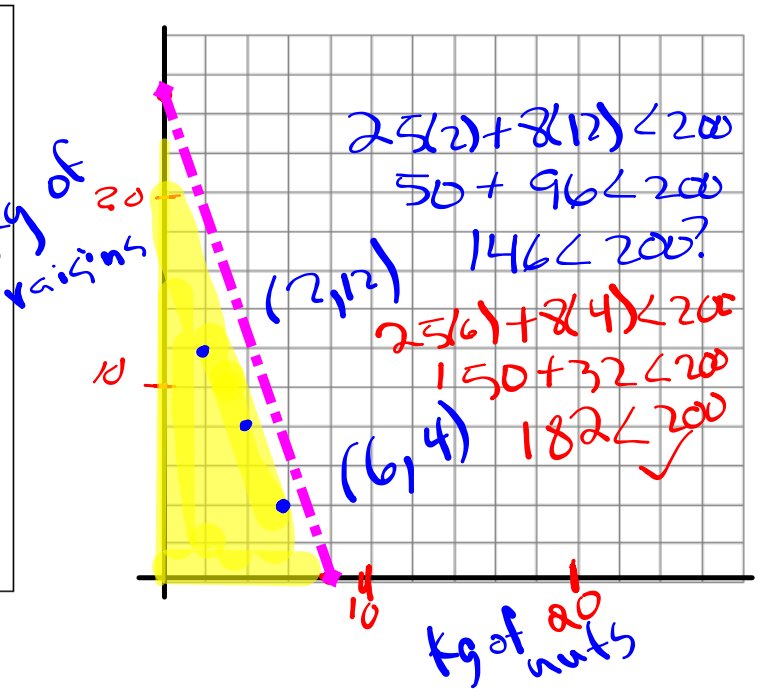
Step 2: Determine the inequality.

$25x + 8y < 200$, $x \geq 0$, $y \geq 0$

$\{(x,y) \mid x \in R, y \in R\}$

Step 3: Graph your inequality. Label your graph.

Step 4: Identify two coordinates that satisfy your inequality and prove why it satisfies the inequality.



Pg 221: Questions #1, 2, 4, 5(a,b,c) Assume Real #'s

Read over page 220

Short read: pg 216/217

R - Real
I - Integers
W - whole #'s

Quiz Friday :)