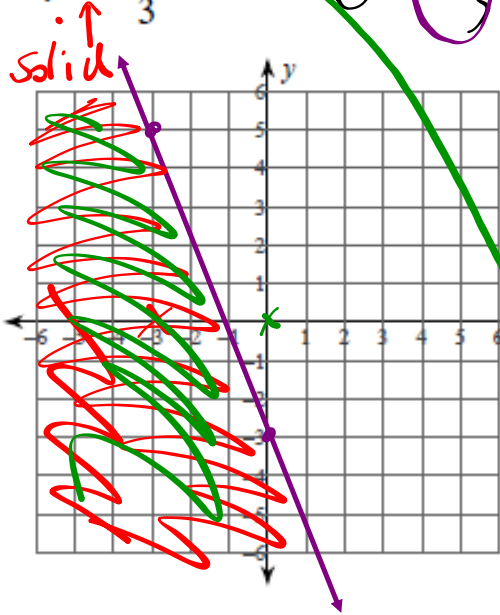


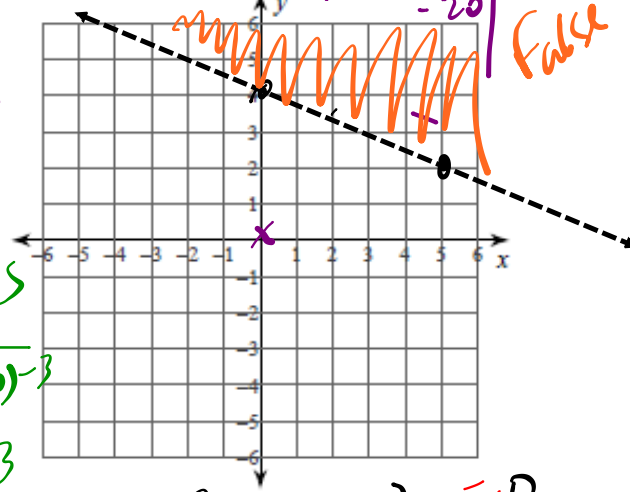
# WARM-UP: Graph each of the following...

$(x, y) \in W$   
 1)  $y \leq -\frac{8}{3}x - 3$



$y = -\frac{8}{3}x - 3$   
 $n = -\frac{8}{3}$   
 $m = \frac{8}{3}$   
 Test  $(0, 0)$   
 $LS \leq RS$   
 $0 \leq \frac{-9(0) - 3}{3}$   
 $0 \leq -3$   
 False

2)  $2x + 5y - 20 > 0$      $LS > RS$   
 $2(0) + 5(0) - 20 > 0$   
 False



$2x + 5y - 20 = 0$   
 $5y = -2x + 20$   
 $y = -\frac{2}{5}x + 4$

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1. A
2. Y
3. P
4. E
5. M
6. T

**MEETPATTY**

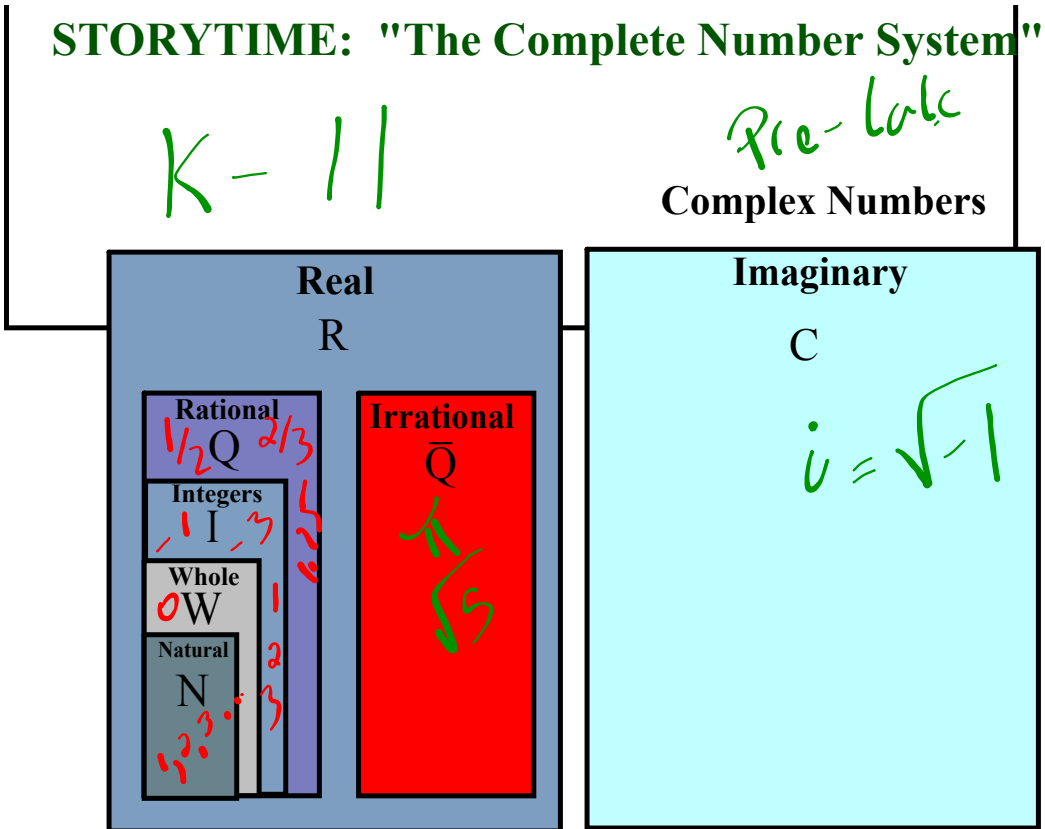
Meet (meat) patty.

**Page 199**

6. W
7. I
8. F
9. R
10. A
11. B

**THEIR FATHER WAS  
A BOAR**

Their father was a  
boar (bore).



## Graphs of Linear In-Equalities

Sometimes the domain and range are stated as being in the set of integers. This means that the solution set is **discrete** and consists of separate or distinct parts. Discrete variables represent things that can be counted, such as people in a room. This means that the solution region is not shaded but rather stippled with points. Domain  $\rightarrow$   $x$  values

So when interpreting the solution region for a linear inequality, consider the restriction on the domain and range of the variables. Range  $\rightarrow$   $y$  values

If the solution set is **continuous**, all the points in the solution region are in the solution set. (Shaded)

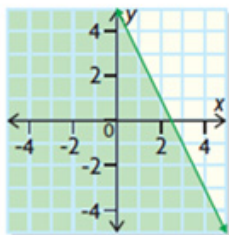
If the solution set is **discrete**, only specific point in the solution region are in the solution set. This is represented graphically by stippling. (DOTS)

Some solution sets may be restricted to specific quadrants. For example, most linear inequalities representing real-world problem situations have graphs that are restricted to the first quadrant.

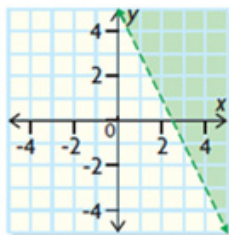
Here are some examples:

$\in \rightarrow$  is a set of OR belongs to

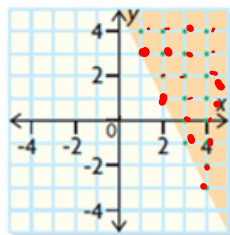
$\{(x, y) \mid y \leq -2x + 5, x \in \mathbb{R}, y \in \mathbb{R}\}$



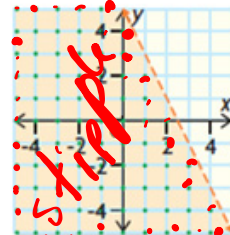
$\{(x, y) \mid y > -2x + 5, x \in \mathbb{R}, y \in \mathbb{R}\}$



$\{(x, y) \mid y \geq -2x + 5, x \in \mathbb{I}, y \in \mathbb{I}\}$

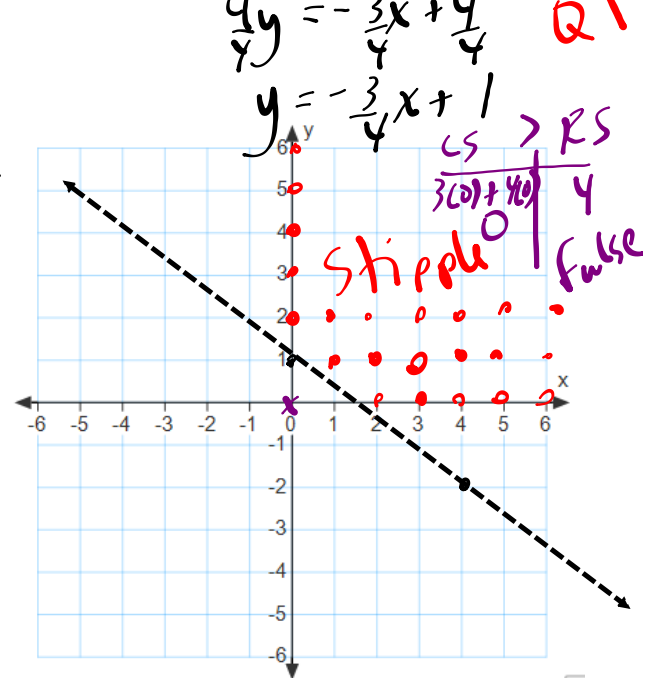
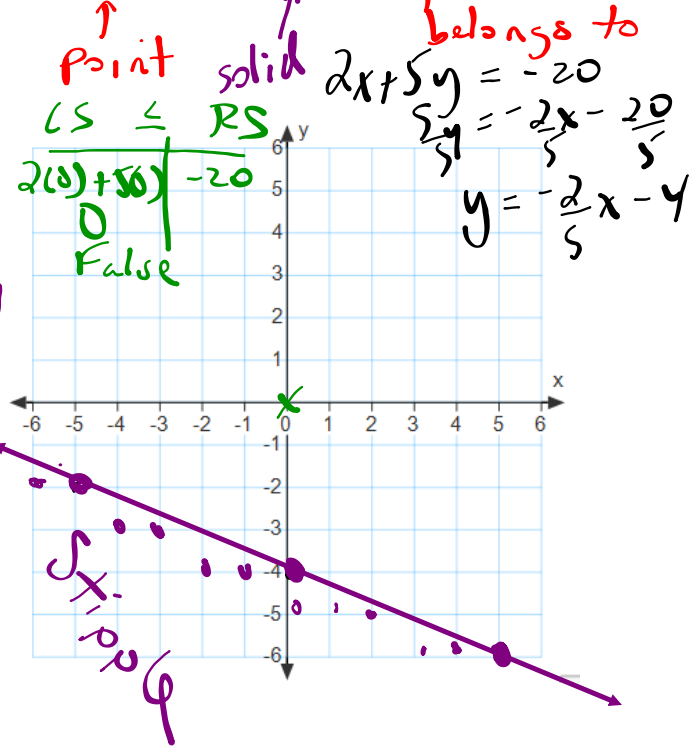


$\{(x, y) \mid y < -2x + 5, x \in \mathbb{I}, y \in \mathbb{I}\}$




Let's do a couple more... *wicket* { }  $\Rightarrow$  set of #'s

- 1)  $\{(x,y) \mid 2x+5y \leq -20, x \in I, y \in I\}$  *such that* *dots* 2)  $\{(x,y) \mid 3x+4y > 4, x \in W, y \in W\}$  *dots*



# HOMEWORK...

 Worksheet - Graphing Inequations with 2 variables.pdf

 Worksheet Solutions - Graphing Linear Inequalities.pdf

## Attachments

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Worksheet - Graphing Inequations with 2 variables.pdf

Worksheet - Graphing Linear Inequalities.pdf