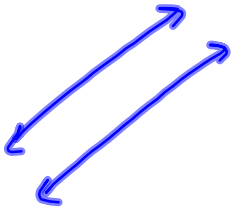
Algebra 11-6 Systems & Parallel Lines & 11-7 Situations that Always or Never Happen

Warm-Up

1. Describe parallel lines using words and a drawing.

lines that do not intersect



2. What is true about the slopes of parallel lines (use Ch. 7 notes if you need to)

they have the same slope

Algebra 11-6 Systems & Parallel Lines

Parallel Lines

Because **parallel lines** do not intersect, there is no Solution. Remember slopes of parallel lines are =, and the y-intercepts are different.

Example

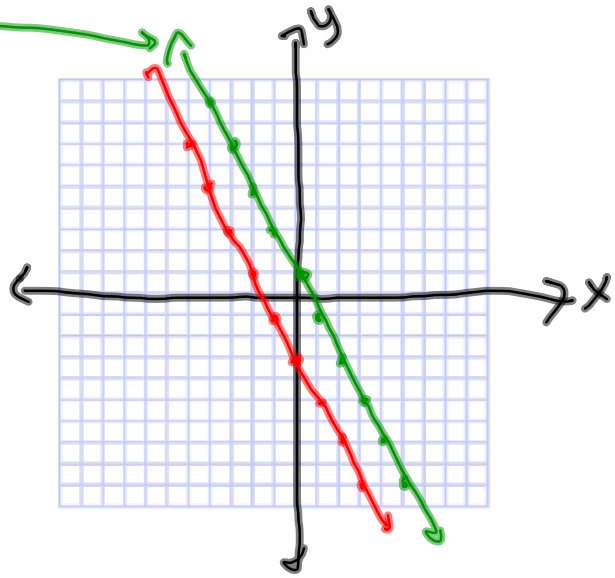
$y = -2x + 1$

$y = -2x - 3$

start

$m = \frac{-2}{1}$

start



Coincident Lines

Coinciding lines are exactly the same line when plotted, but can look different when written as an equation. Because a line goes on and on, forever, there are infinite solutions when we plot coinciding lines. Coinciding lines have the same slope AND the same y-intercept.

Example $m = 1.6 = 1\frac{6}{10} = \frac{16}{10} = \frac{8}{5}$

$y = 1.6x - 6$

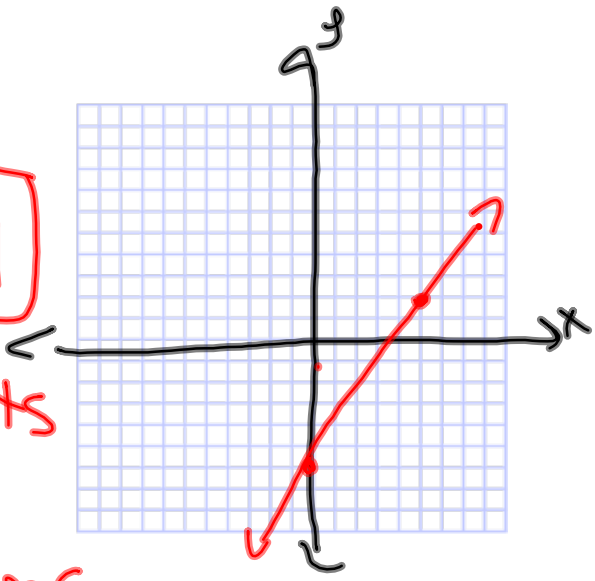
$16x - 10y = 60$

$\frac{-10y}{-10} = \frac{-16x}{-10} + \frac{60}{-10}$

$y = \frac{8}{5}x - 6$

infinite solutions!

All points on line are solutions



11-7 Situations that Always or Never Happen Assignment

When solving an equation, if you get a _____ statement such as 6 > _____ or 5 = _____, then all _____ numbers are the solution.

When solving an equation, if you get a _____ statement such as 6 > _____ or 5 = _____, then there is _____ _____ because it is not _____.

Example

1. Solve $9x - 5x - 2(2x+1) = 15$.

$9x - 5x - 4x - 2 = 15$

$0x - 2 = 15$

$-2 \neq 15$

No Solution

2. Solve $20y + 17 - (7 + 20y) < 11$.

$20y + 17 - 7 - 20y < 11$

$10 < 11$

True

All real #'s or infinitelymany

11-6 #'s 1-3, 8-16

11-7#'s 4-9