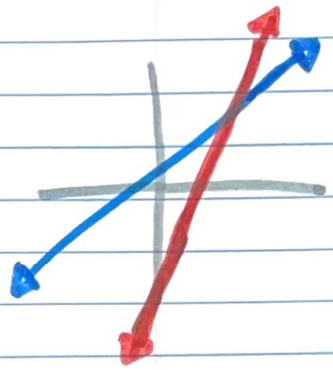
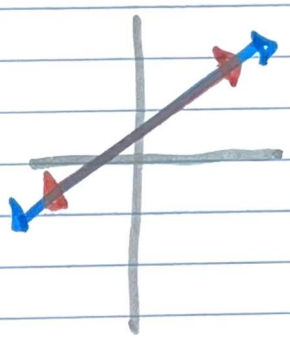
4-7

Lesson [redacted] → Number of Solutions from Equations

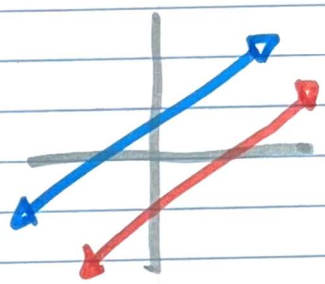
Remember! Different slopes means one solution



Remember! SAme slope same y-intercept means infinite solutions



Remember! SAme slope different yintercept means NO solutions



$\begin{cases} y = -2x+3 \\ y = 2x+3 \end{cases}$ ↑ one solution!

$\begin{cases} y = 3x-7 \\ y = 3x-7 \end{cases}$ ↑↑ Infinite Solutions!

$\begin{cases} y = 3x+1 \\ y = 3x-1 \end{cases}$ ↑↑ NO Solutions!

Tough questions involve Standard Form

$$\begin{cases} 4x+4y=28 \\ x+y=7 \end{cases} \leftarrow *4 \rightarrow \begin{cases} 4x+4y=28 \\ 4x+4y=28 \end{cases}$$

↑ ↑ ↑

infinite solutions!

$$\begin{cases} x+y=10 \\ 2x+2y=10 \end{cases} \leftarrow *2 \rightarrow \begin{cases} 2x+2y=20 \\ 2x+2y=10 \end{cases}$$

↑ ↑ ↑

NO Solutions!

Get it? We can see that if we turned the equations into $y=mx+b$ form, they'd have same slope but different y-intercepts! Tough!