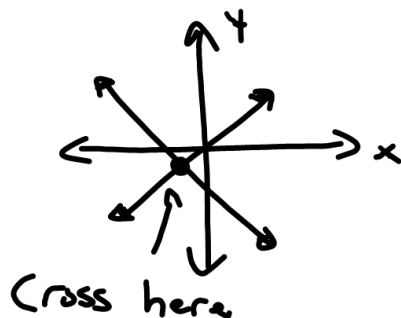
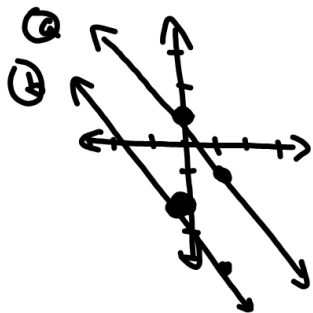


## 7.5 Solve "Special" Systems

Been doing one solution



What if they don't intersect? Parallel Lines!



(a)  $y = -2x + 1$  } Same  
 $+2x$   $+2x$

(b)  $y = -2x - 2$  } Slope  
 $+2x$   $+2x$   $m = -2$

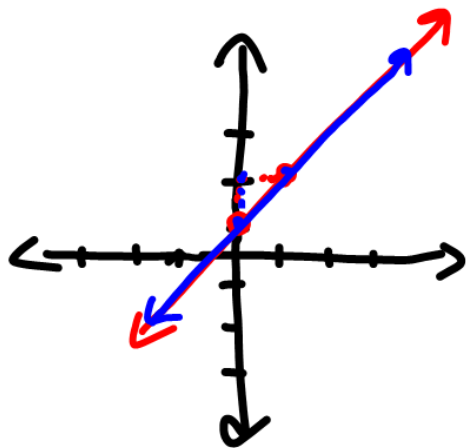
By algebra:

$$\begin{array}{r} \textcircled{a} \quad 2x + y = 1 \quad \rightarrow \quad 2x + y = 1 \\ \textcircled{b} \quad 2x + y = -2 \quad \rightarrow \quad -2x - y = 2 \\ \hline \end{array}$$

$\emptyset \neq 3$

Telling you the lines do not cross  
 \*No solution... lines parallel

What if the lines are the same?



(a)  $y = \frac{1}{1}x + 1$   $\rightarrow$  start in y  $y = mx + b$

(b)  $3y = 3x + 3$

$y = \frac{3}{3}x + \frac{3}{3}$  Same line

(a)  $-x + y = 1$

(b)  $-x + y = 1$

$-x + y = 1$   
 $+ \frac{x - y = -1}{\hline 0 = 0$

$0 = 0$

Means you have the same line.

\*Same line, infinite solutions

# Homework

Graph

$$\textcircled{8} \quad \begin{aligned} x + 2y &= 2 \\ y &= -x + 5 \end{aligned}$$

$$\textcircled{9} \quad \begin{aligned} 3x - 4y &= 12 \\ y &= \frac{3}{4}x - 3 \end{aligned}$$

Solve by algebra

$$\textcircled{10} \quad \begin{aligned} 3x - y &= -9 \\ y &= -x + 5 \end{aligned}$$

$$\textcircled{16} \quad \begin{aligned} -16x + 2y &= -2 \\ -8x + y &= -1 \end{aligned}$$

$$\textcircled{20} \quad \begin{aligned} x - 2y &= 7 \\ -x + 2y &= 30 \end{aligned}$$