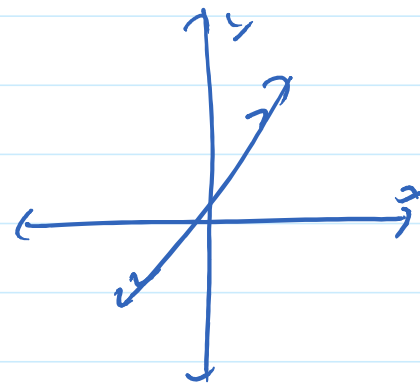
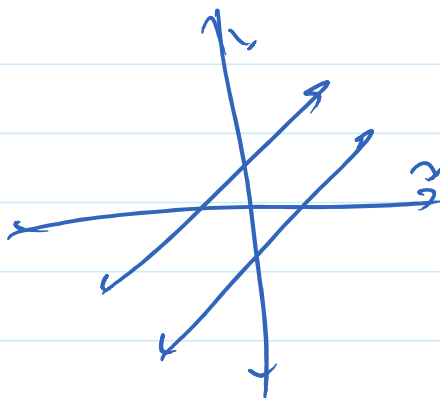
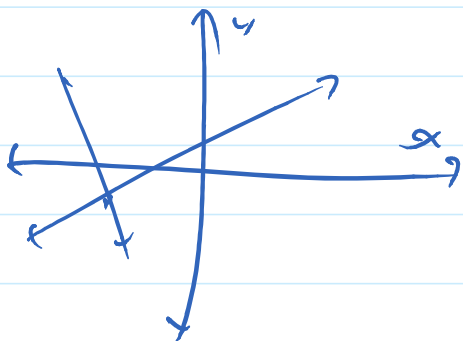


# Sec 5.4 Special Systems



// same  $m$   
 Different  $b$   
 No Solution  $\emptyset$

Same  $m$   
 Same  $b$   
 Solution is  
 Eq of line  
 $\rightarrow$  SOLUTIONS

$$\begin{cases} y = 2x + 1 \\ y = 2x - 5 \end{cases}$$

// lines  $\emptyset$

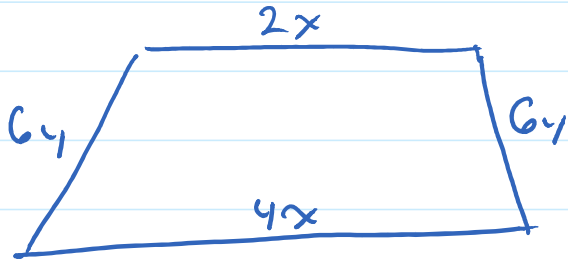
$$\begin{aligned} 2x - 5 &= 2x + 1 \\ -5 &= 1 \quad F \end{aligned}$$

$$\begin{cases} x - 3y = 6 \rightarrow -3y = -x + 6 \rightarrow y = \frac{1}{3}x - 2 \\ 3x - 9y = 18 \rightarrow -9y = -3x + 18 \rightarrow y = \frac{1}{3}x - 2 \end{cases}$$

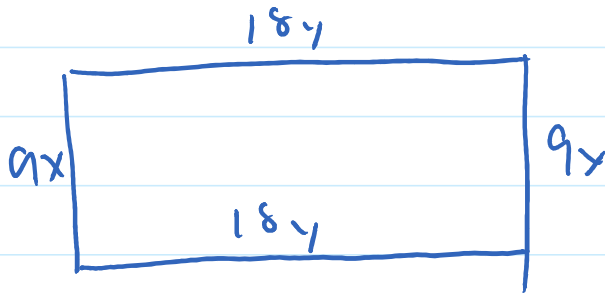
$\rightarrow$  Solution  
 $y = \frac{1}{3}x - 2$

$$-3 \begin{cases} x - 3y = 6 \\ 3x - 9y = 18 \end{cases}$$

$$\begin{array}{r} -3x + 9y = -18 \\ 3x - 9y = 18 \\ \hline 0 = 0 \quad \checkmark \text{ infinite solutions} \end{array}$$



$$P = 72 \text{ km} = 6x + 12y$$



$$P = \frac{216 \text{ km} = 18x + 36y}{3}$$

$$72 = 6x + 12y$$

$$\frac{72 = 6x + 12y}{3}$$

$$0 = 0 \quad \infty$$

$$72 = 6x + 12y$$

$$12y = -6x + 72$$

$$y = -\frac{1}{2}x + 6$$