

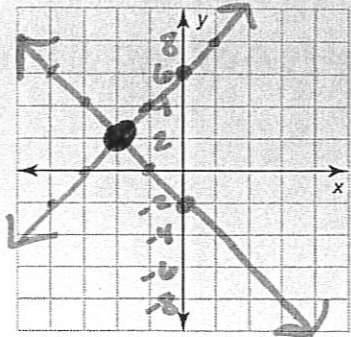
Intersecting Lines

Coinciding Lines

Parallel Lines

$$y = 2x + 6$$

$$y = -2x - 2 \quad (-2, 2)$$



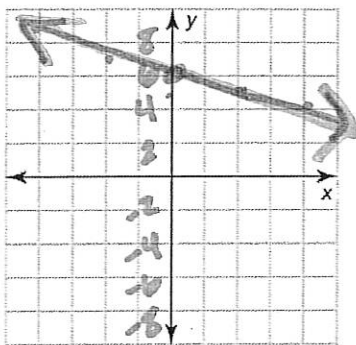
One Solution  
→ solve for  $y$  first!

$$x + 2y = 12$$

$$-x$$

$$x + 2y = 12$$

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



Same Line!  
Infinite Solutions

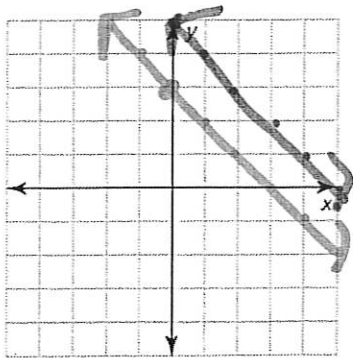
$$\frac{2y}{2} = \frac{-x+12}{2}$$

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

Same Equation  
→ same slope  
→ same  $y$ -int.

$$y = -x + 3$$

$$y = -x + 5$$



Parallel Lines!  
No Solution  
→ same slope  
→ different  $y$ -int.