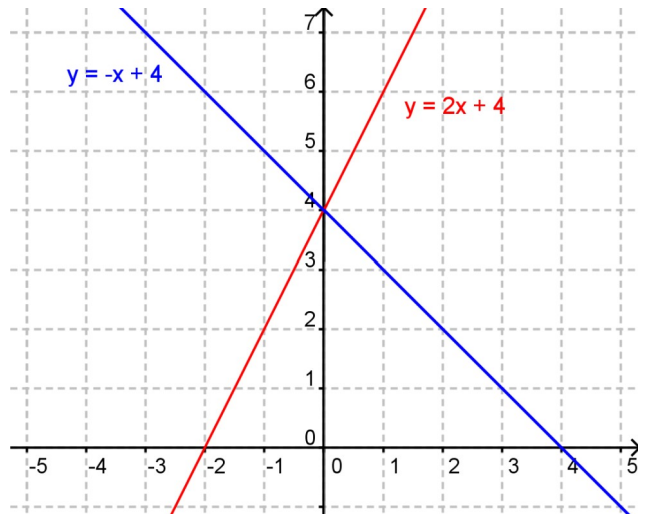


$y = -x + 2$      $y = 2x + 4$

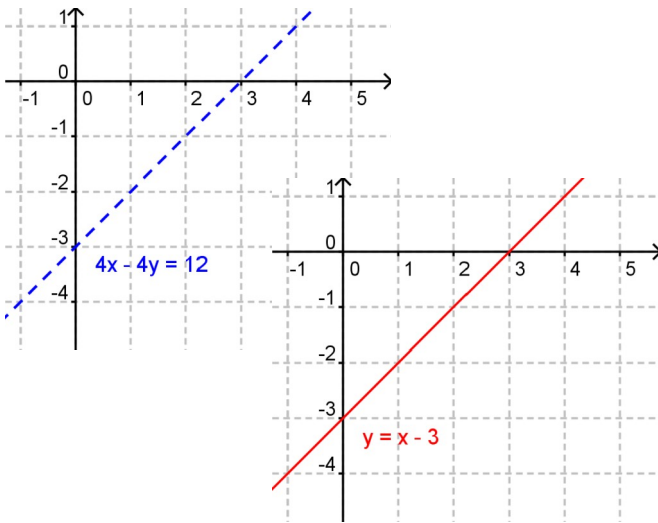
- slopes are different ( $m_1 = -1$  and  $m_2 = 2$ )
- y-intercepts are different (4 and 0)
- one solution



$y = -x + 4$      $y = 2x + 4$

- slopes are different ( $m_1 = -1$  and  $m_2 = 2$ )
- y-intercepts are the same ( $y_{int} = 4$ )
- one solution

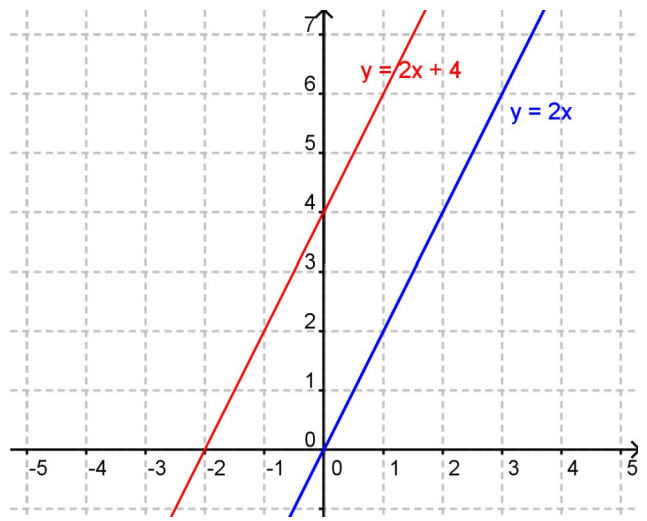
For **one solution**, only the slopes must be different. The y-intercept does not matter.



$4x - 4y = 12$      $y = x - 3$

- slopes are equal ( $m = 1$ )
- y-intercepts are equal ( $-3$ )
- infinite solutions (all points)

For **infinite solutions**, the lines are identical. The slopes and the y-intercepts are the same.



$y = 2x + 4$      $y = 2x$

- slopes are equal ( $m = 2$ )
- y-intercepts are different (4 and 0)
- no solution

For **no solution**, the lines are parallel. The slopes are the same and the y-intercepts are different.