Warm Up 11/15/18

1. Solve: $-3(2x - 4) + 14 = -5x + 2 - x$

$-6x + 12 + 14 = -6x + 2$

$\cancel{-6x} + 26 = \cancel{-6x} + 2$

$\cancel{+6x} \qquad \cancel{+6x}$

$26 = 2$

$\boxed{\emptyset}$

2. The sum of three consecutive odd integers is 63. Solve for the middle integer.

$x = 19$

$x + 2 = 21$

$x + 4 = 23$

$3x + \cancel{6} = 63$

$\cancel{-6} \quad -6$

$\frac{3x}{3} = \frac{57}{3}$

$x = 19$

SYSTEMS of EQUATIONS

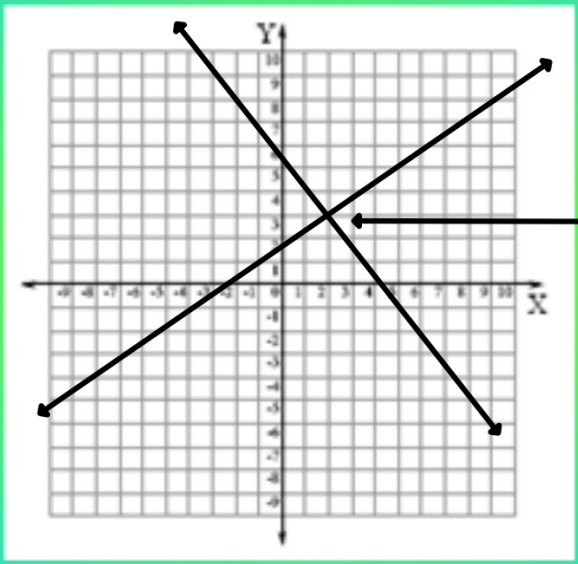
WHAT IS IT

Two or more linear equations involving the same variables form a system of equations.

A solution of the system of equations is an <u>ordered pair</u> that satisfies *both* equations.

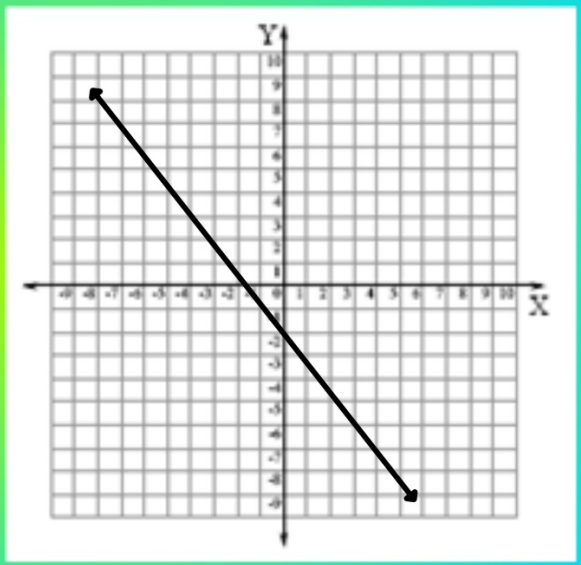
Two intersecting lines will have

<u>1 solution</u>



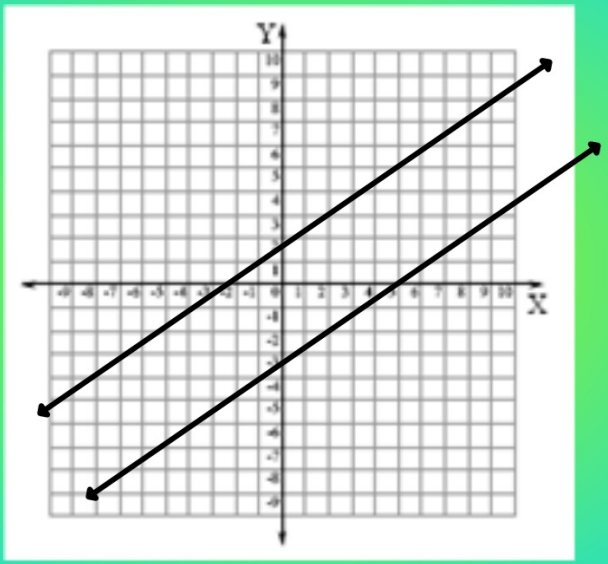
(x, y)

Two lines that are the same will have **<u>infinitely many solutions</u>**



(The lines are on top of eachother)

Two parallel lines will have **<u>no solution</u>**



(They never intersect)

Graphing Method

WHEN TO USE??

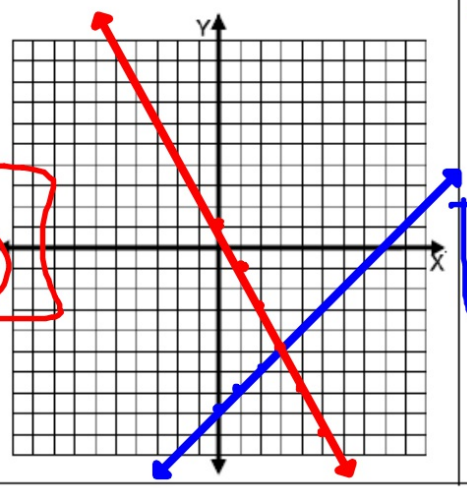
...when both equations are in slope-intercept form ($y=mx+b$)

Ex: $y = x + 3$
$y = x - 1$

Solving by Graphing

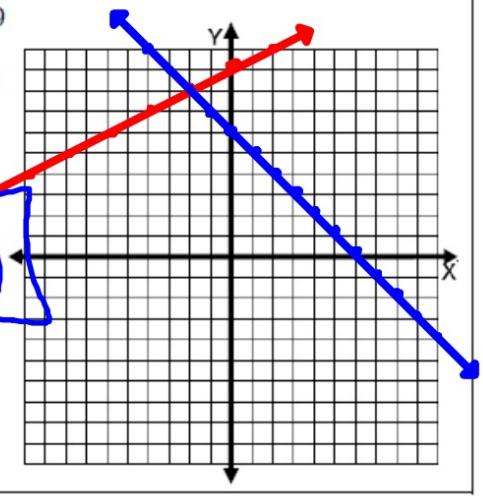
Note: Make sure equations are in _____ form!

1. $y = x - 8$
$y = -2x + 1$



(3,-5)

2. $y = \frac{1}{2}x + 9$
$y = -x + 6$



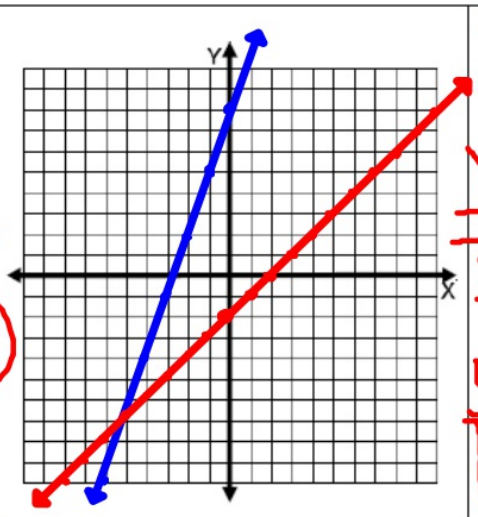
(-2,8)

3. $-3x + y = 8$
$-x + y = -2$

$y = 3x + 8$

$y = x - 2$

$(-5, -7)$



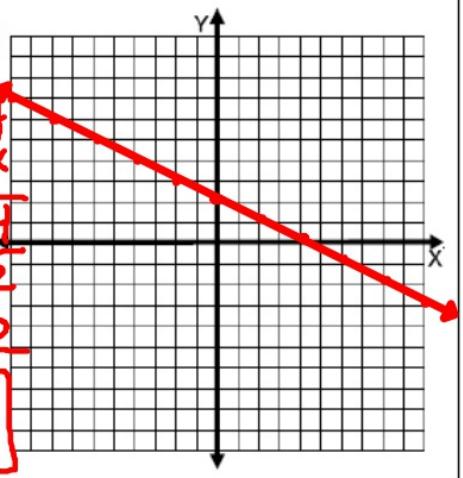
4. $x + 2y = 4$
$y = -\frac{1}{2}x + 2$

$x + 2y = 4$
$-x \qquad -x$

$\frac{2y}{2} = \frac{-x}{2} + \frac{4}{2}$

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

$\boxed{\infty}$



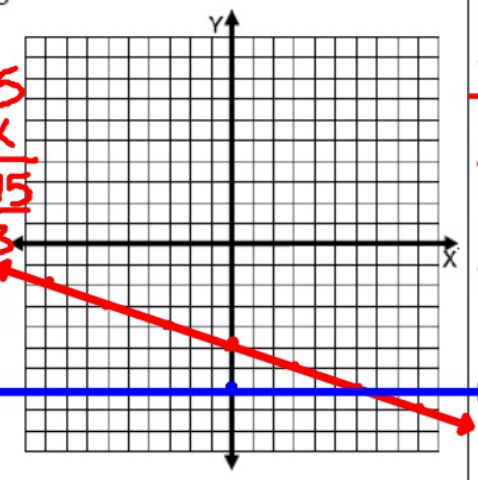
5. $x + 3y = -15$
$y = -7$

$x + 3y = -15$
$-x \qquad -x$

$\frac{3y}{3} = \frac{-x}{3} - \frac{15}{3}$

$y = -\frac{1}{3}x - 5$

$(6, -7)$



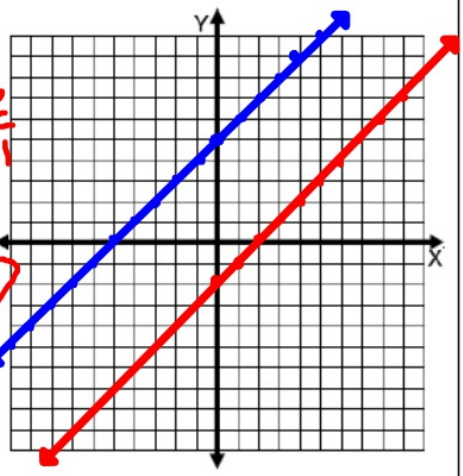
6. $y = x + 5$
$x - y = 2$

$-x \qquad -x$

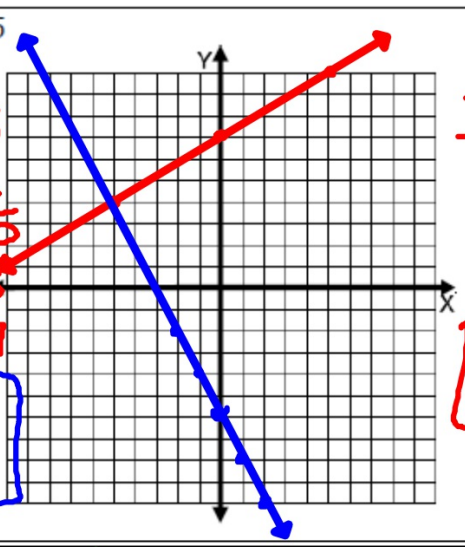
$\frac{-y}{-1} = \frac{-x}{-1} + \frac{2}{-1}$

$y = x - 2$

$\boxed{\emptyset}$

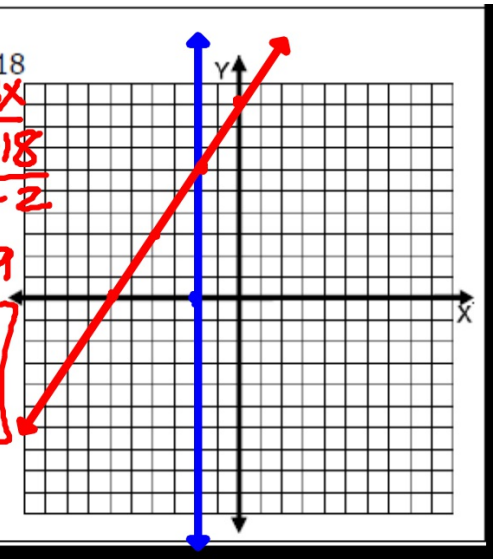


7. $3x - 5y = -35$
$2x + y = -6$



$3x - 5y = -35$
$-3x \quad -3x$
$\frac{-5y}{-5} = \frac{-3x}{-5} - \frac{35}{-5}$
$y = \frac{3}{5}x + 7$
$(-5, 4)$

8. $x = -2$
$3x - 2y = -18$



$-3x \quad -3x$
$\frac{-2y}{-2} = \frac{-3x}{-2} - \frac{18}{-2}$
$y = \frac{3}{2}x + 9$
$(-2, 6)$

$2x + y = -6$
$-2x \quad -2x$
$y = -2x - 6$