

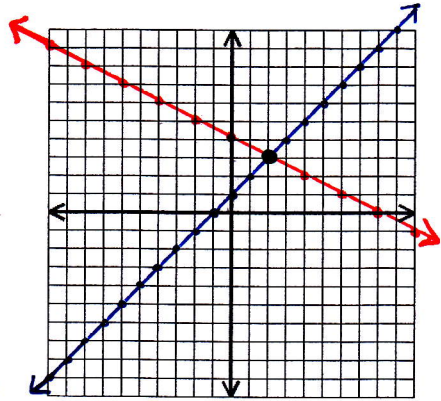
8.1 – GRAPHING SYSTEMS OF EQUATIONS

Solve each system by graphing.

$$1. \begin{array}{l} 2x - y = 8 \\ x + y = 1 \end{array}$$

$$\begin{array}{l} -y = -2x + 8 \\ y = 2x - 8 \\ y = -x + 1 \end{array}$$

Solution: (3, -2)



CHECK:

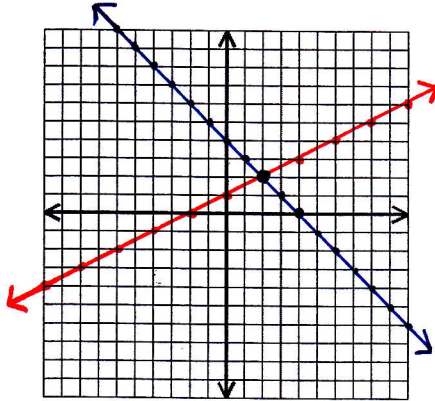
$$2(3) - (-2) = 8 \\ 6 + 2 = 8 \\ 8 = 8 \checkmark$$

$$3 - 2 = 1 \\ 1 = 1 \checkmark$$

$$2. \begin{array}{l} 2x + y = 2 \\ x - y = 4 \end{array}$$

$$\begin{array}{l} y = -2x + 2 \\ -y = -x + 4 \\ y = x - 4 \end{array}$$

Solution: (2, -2)

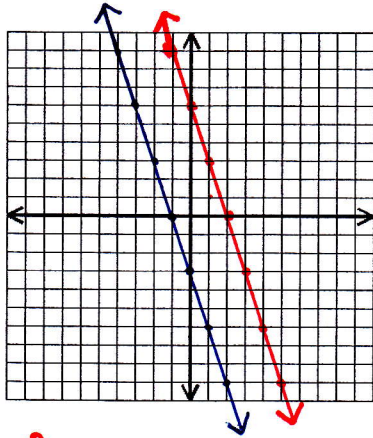


$$3. \begin{array}{l} x - 3y = 6 \\ x - 3y = -3 \end{array}$$

$$\begin{array}{l} -3y = -x + 6 \\ y = \frac{1}{3}x - 2 \\ -3y = -x - 3 \\ y = \frac{1}{3}x + 1 \end{array}$$

Same slope means
lines are parallel.
They will never
intersect!

No Solution



$$4. \begin{array}{l} 2x - y = 1 \\ 6x - 3y = 3 \end{array}$$

$$\begin{array}{l} -y = -2x + 1 \\ y = 2x - 1 \\ -3y = -6x + 3 \\ y = 2x - 1 \end{array}$$

Same line!
Intersects
everywhere!
Infinite solutions

