Solving Systems – Worksheet #1

Please make sure that you:

1 – Graph both equations (use any graphing method)
2 – Locate the intersection point
3 – Check your answer to make sure it works

SHOW ALL YOUR WORK and PAY ATTENTION TO DETAILS!!

1) \[ y = x + 3 \]
   \[ y = -2x - 3 \]

   \[ m = \frac{1}{1} \]
   \[ \text{Check solution:} \]
   \[ y = x + 3 \]
   \[ 1 = -2 + 3 \]
   \[ 1 = 1 \]
   \[ \text{Check!} \]

   \[ m = \frac{-2}{1} \]
   \[ (0, -3) \]

   SOLUTION
   \[ (-2, 1) \]

2) \[ y = -3x + 4 \]
   \[ y = \frac{1}{3}x - 6 \]

   \[ m = \frac{-3}{1} \]
   \[ (0, 4) \]

   \[ \text{Check solution:} \]
   \[ y = -3x + 4 \]
   \[ -5 = -3 \cdot 3 + 4 \]
   \[ -5 = -9 + 4 \]
   \[ -5 = -5 \]
   \[ \text{Check!} \]

   \[ m = \frac{1}{3} \]
   \[ (0, -6) \]

   SOLUTION
   \[ (3, -5) \]
Solving Systems – Worksheet #1

1. \[ \frac{3y}{3} = -2x - 3 \]
   
   \[ y = -\frac{2}{3}x - 1 \]
   
   \[ m = -\frac{2}{3} \]
   
   \[ (0, -1) \]
   
   \[ 3y = -2x - 3 \]
   
   \[ 3y = x - 12 \]
   
   \[ \frac{3y}{3} = \frac{x - 12}{3} \]
   
   \[ y = \frac{1}{3}x - 4 \]
   
   **SOLUTION**
   
   \[ (3, -3) \]
   
   Check solution:
   
   \[ m = \frac{1}{3} \]
   
   \[ (0, -4) \]

2. \[ y = 2x - 1 \]
   
   \[ 2x - y = 5 \]
   
   \[ m = \frac{2}{1} \]
   
   \[ (0, -1) \]
   
   Check solution:
   
   **SOLUTION**
   
   \[ \text{No Solution} \]

5. Is \((3, -4)\) a solution to the following system:

   \[ y = -3x + 5 \]
   
   \[ 2x + 3y = -6 \]
   
   \[ 16 - 8x = 2y \]
   
   \[ y = -3x + 5 \]
   
   \[ 2x + 3y = -6 \]
   
   \[ 16 - 8x = 2y \]
   
   \[ -4 = -3 \times 3 + 5 \]
   
   \[ 6 + 12 = -6 \]
   
   \[ 16 - 8 \times 3 = 2 \times -4 \]
   
   \[ -4 = -4 \]

   **YES!**