Typeset by Jonathan Rufo Bacolod using LaTeX

Activity 1.9.1: Solving Systems of Linear Equations by Substitution Method

Total points = 52

Answers

1. $y = \frac{2}{3}x + 6$ ✓
   $-\frac{3}{2}x + 6 = \frac{2}{3}x + 6$ ✓
   $-\frac{3}{2}x - \frac{2}{3}x + 6 - 6 = \frac{2}{3}x - \frac{2}{3}x + 6 - 6$ ✓
   $x = 0$ ✓
   $y = \frac{2}{3}(0) + 6$ ✓
   $y = 6$ ✓
   $\therefore$ Sol. $= \{(0, 6)\}$ ✓

2. $x + y = 7$ ✓
   $x + y - y = -y + 7$ ✓
   $x = -y + 7$ ✓
   $x - y = 1$ ✓
   $-y + 7 - y = 1$ ✓
   $-2y + 7 - 7 = 1 - 7$ ✓
   $\frac{-2y}{-2} = \frac{-6}{-2}$ ✓
   $y = 3$ ✓
   $x + 3 = 7$ ✓
   $x = 4$ ✓
   $\therefore$ Sol. $= \{(4, 3)\}$ ✓

3. $4x - y = 8$ ✓
   $4x - 4x - y = -4x + 8$ ✓
   $-1[-y = -4x + 8]$ ✓
   $y = 4x - 8$ ✓
   $3x + 2y = 6$ ✓
   $3x + 2(4x - 8) = 6$ ✓
   $3x + 8x - 16 = 6$ ✓
   $11x - 16 + 16 = 6 + 16$ ✓
   $\frac{11x}{11} = \frac{22}{11}$ ✓
   $x = 2$ ✓
   $4(2) - y = 8$ ✓
   $8 - y = 8$ ✓
   $y = 0$ ✓
   $\therefore$ Sol. $= \{(2, 0)\}$ ✓

4. $x + 4y = 8$ ✓
   $x + 4y - 4y = -4y + 8$ ✓
   $x = -4y + 8$ ✓
   $x - 2y = 2$ ✓
   $-4y + 8 - 2y = 2$ ✓
   $-6y + 8 - 8 = 2 - 8$ ✓
   $\frac{-6y}{-6} = \frac{-6}{-6}$ ✓
   $y = 1$ ✓
   $x + 4(1) = 8$ ✓
   $x + 4 = 8$ ✓
   $x = 4$ ✓
   $\therefore$ Sol. $= \{(4, 1)\}$ ✓

5. $x + y = 5$ ✓
   $x + \frac{1}{2}x + 2 = 5$ ✓
   $\frac{3}{2}x + 2 - 2 = 5 - 2$ ✓
   $\frac{2}{3}[\frac{3}{2}x = 3]$ ✓
   $x = 2$ ✓
   $2 + y = 5$ ✓
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