## Activity 1.7.1: Solving Problems Involving Linear Equations Activity 1.7.1: Solving Problems Involving Linear Equations Total points = 60Total points = 60Answers Answers $\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$ $y = \frac{1}{3}x - \frac{8}{3} \checkmark$ $m = \frac{1}{3}\checkmark, b = -\frac{8}{3}\checkmark$ $\frac{1}{2}$ 1. 8x + 2y = 7 $\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$ $y = \frac{1}{3}x - \frac{8}{3} \checkmark$ $y = \frac{1}{3}x - \frac{8}{3} \checkmark$ $\frac{9}{8}$ 1. 8x + 2y = 7 $8x - 8x + 2y = -8x + 7 \checkmark$ $\frac{2y}{2} = \frac{-8x}{2} + \frac{7}{2} \checkmark$ $y = -4x + \frac{7}{2} \checkmark$ $8x - 8x + 2y = -8x + 7 \checkmark$ $\frac{2y}{2} = \frac{-8x}{2} + \frac{7}{2} \checkmark$ $m = \frac{1}{3} \checkmark, b = -\frac{3}{3} \checkmark$ $y = -4x + \frac{7}{2} \checkmark$ $m = -4\checkmark, b = \frac{7}{2}$ $y = -4x + \frac{i}{2} \checkmark$ $m = -4\checkmark, b = \frac{7}{2}\checkmark$ . Consistent and Independent 🗸 . Consistent and Independent 🗸 $2y = 6x - 5 \checkmark$ $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2} \checkmark$ $2y = 6x - 5 \checkmark$ $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$ y = -4x + 1 $\checkmark$ $m = -4\checkmark$ , b = 1 $\checkmark$ $\therefore$ Inconsistent and Independent $\checkmark$ $m = -4\checkmark, b = 1\checkmark$ $\therefore$ Inconsistent and Independent $\checkmark$ in Inconsistent and Mar. 2. $x - 2y = 9 \checkmark$ $x - x - 2y = -x + 9 \checkmark$ $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$ $y = \frac{1}{2}x - \frac{9}{2} \checkmark$ $1 \qquad b = -\frac{9}{2} \checkmark$ $y = 3x - \frac{6}{2} \checkmark$ $y = 3x - \frac{3}{2} \checkmark$ x - 2y = 9 $m = 3\checkmark, b = -\frac{5}{2}\checkmark$ $x - 2y = 9 \checkmark$ $x - x - 2y = -x + 9 \checkmark$ $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$ $y = \frac{1}{2}x - \frac{9}{2} \checkmark$ $m = 3\checkmark, b = -\frac{5}{2}\checkmark$ $3y = 9x + 1\checkmark$ $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3}$ $3y = 9x + 1\checkmark$ $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3}$ $m = \frac{1}{2} \checkmark, b = -\frac{9}{2} \checkmark$ $m = \frac{1}{2} \checkmark, b = -\frac{9}{2} \checkmark$ $y = 3x + \frac{1}{3} \checkmark$ $y = 3x + \frac{1}{3} \checkmark$ $m = 3\checkmark, b = \frac{1}{3}\checkmark$ $m=3\checkmark, b=\frac{1}{3}\checkmark$ $\begin{array}{l} x + 3y = 14 \checkmark \\ x - x + 3y = -x + 14 \checkmark \\ \frac{3y}{3} = \frac{-x}{3} + \frac{14}{3} \checkmark \\ y = -\frac{1}{3}x + \frac{14}{3} \checkmark \\ m = -\frac{1}{3}\checkmark, b = \frac{14}{3} \checkmark \end{array}$ $x + 3y = 14 \checkmark$ x + 3y = 14 $x + 3y = 14 \checkmark$ $x - x + 3y = -x + 14 \checkmark$ $\frac{3y}{3} = \frac{-x}{3} + \frac{14}{3} \checkmark$ $y = -\frac{1}{3}x + \frac{14}{3} \checkmark$ $m = -\frac{1}{3}\checkmark, b = \frac{14}{3}\checkmark$ : Inconsistent and Independent 🗸 ∴ Inconsistent and Independent 🗸 $3x + 5y = 15\checkmark$ 5. 3x + 5y = 15 $3x + 5y = 15\checkmark$ $3x - 3x + 5y = -3x + 15\checkmark$ $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5} \checkmark$ $y = -\frac{3}{5}x + 3\checkmark$ $m = -\frac{3}{5}\checkmark, b = 3\checkmark$ $3x + 5y = 15\checkmark$ $3x - 3x + 5y = -3x + 15\checkmark$ $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5} \checkmark$ $y = -\frac{3}{5}x + 3 \checkmark$ $m = -\frac{3}{5}\checkmark, b = 3 \checkmark$ $\therefore$ Consistent and Independent $\checkmark$ $\therefore$ Consistent and Independent $\checkmark$ 3. x + 3y = 8 $x - x + 3y = -x + 8 \checkmark$ $x - x + 3y = -x + 8 \checkmark$ x - x + 3y = -x - 3y = -3y - 3y = -3y + 8y = -3y = -3y + 8y = -3y = -3x - x + 3y = -x - 3y = -3y - 3y = -3y + 8y = -3y = -3y + 8y = -3y = -3 $4x - 7y = 10\checkmark$ $4x - 7y = 10\checkmark$ $4x - 7y = 10\checkmark$ $4x - 4x - 7y = -4x + 10\checkmark$ $\frac{-7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$ $y = \frac{4}{7}x - \frac{10}{7} \checkmark$ $m = \frac{4}{7}x + \frac{10}{7}x \checkmark$ $4x - 7y = 10\checkmark$ $4x - 4x - 7y = -4x + 10\checkmark$ $\frac{-7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$ $y = \frac{4}{7}x - \frac{10}{7} \checkmark$ $m = \frac{4}{7}\checkmark, b = -\frac{10}{7}\checkmark$ $m = \frac{4}{7} \checkmark, b = -\frac{10}{7} \checkmark$ $x-3y=8 \checkmark$ $x-3y=8 \checkmark$ $x - x - 3y = -x + 8 \checkmark$ $x - x - 3y = -x + 8 \checkmark$ ∴ Consistent and Independent ✓ ∴ Consistent and Independent ✓ Activity 1.7.1: Solving Problems Involving Linear Equations Activity 1.7.1: Solving Problems Involving Linear Equations

Total points = 60

## Answers

 $m = -4\checkmark, b = \frac{7}{2}\checkmark$  $m=-4\checkmark,b=1\checkmark$ 

 $\therefore$  Inconsistent and Independent  $\checkmark$  $\therefore \text{ Inconsistent and Index}$ 2.  $x - 2y = 9 \checkmark$   $x - x - 2y = -x + 9 \checkmark$   $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$   $y = \frac{1}{2}x - \frac{9}{2} \checkmark$   $m = \frac{1}{2}\checkmark, b = -\frac{9}{2}\checkmark$ 

 $x + 3y = 14 \checkmark$   $x - x + 3y = -x + 14 \checkmark$   $\frac{3y}{3} = \frac{-x}{3} + \frac{14}{3} \checkmark$   $y = -\frac{1}{3}x + \frac{14}{3} \checkmark$   $m = -\frac{1}{3}\checkmark, b = \frac{14}{3}\checkmark$ 

∴ Consistent and Independent 🗸

3.  $x + 3y = 8 \checkmark$  $x - x + 3y = -x + 8 \checkmark$ x - x + 3y = -x + 8  $\frac{3y}{3} = \frac{-x}{3} + \frac{8}{3} \checkmark$   $y = -\frac{1}{3}x + \frac{8}{3} \checkmark$   $m = -\frac{1}{3}\checkmark, b = \frac{8}{3}\checkmark$  $x-3y=8 \checkmark$  $x - x - 3y = -x + 8 \checkmark$ 

$$\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$$

$$y = \frac{1}{3}x - \frac{8}{3} \checkmark$$

$$m = \frac{1}{3}\checkmark, b = -\frac{8}{3}\checkmark$$

$$\therefore \text{ Consistent and Independent }\checkmark$$

2y = 6x - 5  $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$   $y = 3x - \frac{5}{2}$  $m = 3\checkmark, b = -\frac{5}{2}\checkmark$ 

 $3y = 9x + 1\checkmark$  $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3} \checkmark$  $y = 3x + \frac{1}{3} \checkmark$  $m = 3\checkmark, b = \frac{1}{3}\checkmark$ 

. Inconsistent and Independent 🗸  $3x + 5y = 15\checkmark$  $3x + 3y = 13\checkmark$   $3x - 3x + 5y = -3x + 15\checkmark$   $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5}\checkmark$  $\overline{5} - 5$   $y = -\frac{3}{5}x + 3 \checkmark$   $m = -\frac{3}{5}\checkmark, b = 3 \checkmark$  $4x - 7y = 10\checkmark$ 

 $4x - 7y = 10\checkmark$   $4x - 4x - 7y = -4x + 10\checkmark$   $\frac{-7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$   $y = \frac{4}{7}x - \frac{10}{7} \checkmark$   $m = \frac{4}{7}\checkmark, b = -\frac{10}{7}\checkmark$ 

∴ Consistent and Independent ✓

Total points = 60

Answers  $\frac{9}{8}$  1. 8x + 2y = 7

 $8x - 8x + 2y = -8x + 7 \checkmark$   $\frac{2y}{2} = \frac{-8x}{2} + \frac{7}{2} \checkmark$  $y = -4x + \frac{7}{2} \checkmark$ 

 $m = -4\checkmark, b = \frac{7}{2}\checkmark$ 

 $m = -4\checkmark, b = 1\checkmark$  $\therefore$  Inconsistent and Independent  $\checkmark$ 

2. x - 2y = 9

 $x - 2y = 9 \checkmark$  $x - x - 2y = -x + 9 \checkmark$  $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$  $y = \frac{1}{2}x - \frac{9}{2} \checkmark$ 1 9 $m = \frac{1}{2} \checkmark, b = -\frac{9}{2}$ 

 $x + 3y = 14 \checkmark$ x + 3y = 14 x - x + 3y = -x + 14  $\frac{3y}{3} = \frac{-x}{3} + \frac{14}{3}$   $y = -\frac{1}{3}x + \frac{14}{3}$   $m = -\frac{1}{3}\checkmark, b = \frac{14}{3}\checkmark$ 

∴ Consistent and Independent 🗸 3. x + 3y = 8 $x - x + 3y = -x + 8 \checkmark$ x - x + 3y - -x  $\frac{3y}{3} = \frac{-x}{3} + \frac{8}{3}$   $y = -\frac{1}{3}x + \frac{8}{3}$   $m = -\frac{1}{3}x + \frac{8}{3}$  $m = -\frac{1}{3}\checkmark, b = \frac{8}{3}\checkmark$ 

 $x-3y=8 \checkmark$ 

 $x - x - 3y = -x + 8 \checkmark$ 

 $\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$   $y = \frac{1}{3}x - \frac{8}{3} \checkmark$   $x = \frac{1}{3}x - \frac{8}{3} \checkmark$ 

 $m = \frac{1}{3} \checkmark, b = -\frac{8}{3} \checkmark$ 

... Consistent and Independent 🗸  $2y = 6x - 5 \checkmark$   $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$  $y = 3x - \frac{5}{2} \checkmark$ 

 $m = 3\checkmark, b = -\frac{5}{2}$  $3y = 9x + 1\checkmark$  $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3} \checkmark$ 

 $y = 3x + \frac{1}{3} \checkmark$ 

 $m = 3\checkmark, b = \frac{1}{3}\checkmark$ 

: Inconsistent and Independent 🗸  $3x + 5y = 15\checkmark$ 

 $3x + 5y = 15\checkmark$   $3x - 3x + 5y = -3x + 15\checkmark$   $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5} \checkmark$   $y = -\frac{3}{5}x + 3\checkmark$   $m = -\frac{3}{5}\checkmark, b = 3\checkmark$ 

 $4x - 7y = 10\checkmark$  $4x - 7y = 10\checkmark$   $4x - 4x - 7y = -4x + 10\checkmark$   $\frac{-7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$   $y = \frac{4}{7}x - \frac{10}{7} \checkmark$   $m = \frac{4}{7}\checkmark, b = -\frac{10}{7}\checkmark$ 

∴ Consistent and Independent ✓