Activity 1.7.3: Systems of Linear Equations in Two Variables Activity 1.7.3: Systems of Linear Equations in Two Variables Total points = 60 Total points = 60 Answers Answers $\int_{0}^{\infty} \frac{1}{1} \cdot 8x + 2y = 7 \checkmark$ $\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$ $\frac{-3y}{-3} = \frac{-x}{-3} + \frac{8}{-3} \checkmark$ $\frac{9}{8}$ 1. 8x + 2y = 7 $8x - 8x + 2y = -8x + 7 \checkmark$ $\frac{2y}{2} = \frac{-8x}{2} + \frac{7}{2} \checkmark$ $y = -4x + \frac{7}{2} \checkmark$ $8x - 8x + 2y = -8x + 7 \checkmark$ $\frac{2y}{2} = \frac{-8x}{2} + \frac{7}{2} \checkmark$ $y = \frac{1}{3}x - \frac{8}{3} \checkmark$ $m = \frac{1}{3}\checkmark, b = -\frac{8}{3}\checkmark$ $y = \frac{1}{3}x - \frac{8}{3} \checkmark$ $m = \frac{1}{3} \checkmark, b = -\frac{8}{3} \checkmark$ $y = -4x + \frac{7}{2}$ $y = \frac{1}{2}$ $m = -4\checkmark, b = \frac{7}{2}\checkmark$ $m = -4\checkmark, b = \frac{7}{2} \checkmark$... Consistent and Independent 🗸 ∴ Consistent and Independent 🗸 2y = 6x - 52y = 6x - 5 $2y = 6x - 5 \checkmark$ $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$ $y = 3x - \frac{5}{2} \checkmark$ $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$ $2 - \frac{5}{2}$ $y = 3x - \frac{5}{2} \checkmark$ m = 2 $m = -4\checkmark, b = 1\checkmark$ $m = -4\checkmark, b = 1\checkmark$ ∴ Inconsistent and Independent ✓ ∴ Inconsistent and Independent ✓ 2. x - 2y = 92. x - 2y = 9 $\begin{array}{l} x - 2y = 9 \checkmark \\ x - x - 2y = -x + 9 \checkmark \\ -\frac{2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark \\ y = \frac{1}{2}x - \frac{9}{2} \checkmark \\ x - \frac{1}{2}x - \frac{9}{2} \checkmark \end{array}$ $m=3\checkmark, b=-rac{5}{2}$ $m = 3\checkmark, b = -\frac{5}{2}\checkmark$ $x - x - 2y = -x + 9 \checkmark$ $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$ $y = \frac{1}{2}x - \frac{9}{2} \checkmark$ $3y = 9x + 1\checkmark$ $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3}$ $3y = 9x + 1\checkmark$ $\frac{3y}{3} = \frac{9x}{3} + \frac{1}{3}$ $m = \frac{1}{2} \checkmark, b = -\frac{9}{2} \checkmark$ $m = \frac{1}{2} \checkmark, b = -\frac{9}{2} \checkmark$ $y = 3x + \frac{1}{3} \checkmark$ $y = 3x + \frac{1}{3} \checkmark$ $m=3\checkmark,b=\frac{1}{3}\checkmark$ $m=3\checkmark,b=\frac{1}{3}\checkmark$ $x + 3y = 14 \checkmark$ $x + 3y = 14 \checkmark$ $x - x + 3y = -x + 14 \checkmark$ $\frac{3y}{3} = \frac{-x}{3} + \frac{14}{3} \checkmark$ $x - x + 3y = -x + 14 \checkmark$ $\frac{3y}{3} = \frac{-x}{3} + \frac{14}{3} \checkmark$. Inconsistent and Independent 🗸 : Inconsistent and Independent 🗸 5. 3x + 5y = 155. $3x + 5y = 15\checkmark$ $y = -\frac{1}{3}x + \frac{14}{3} \checkmark$ $m = -\frac{1}{3}\checkmark, b = \frac{14}{3}\checkmark$ $3x - 3x + 5y = -3x + 15\checkmark$ $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5}\checkmark$ $y = -\frac{1}{3}x + \frac{14}{3} \checkmark$ $m = -\frac{1}{3}\checkmark, b = \frac{14}{3}\checkmark$ $3x - 3x + 5y = -3x + 15\checkmark$ $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5}\checkmark$ $y = -\frac{3}{5}x + 3 \checkmark$ $m = -\frac{3}{5}\checkmark, b = 3 \checkmark$ $y = -\frac{3}{5}x + 3 \checkmark$ $m = -\frac{3}{5}\checkmark, b = 3 \checkmark$ ∴ Consistent and Independent ✓ ∴ Consistent and Independent 🗸 3. x + 3y = 83. x + 3y = 8 $x - 3y = 3 \checkmark$ $x - x + 3y = -x + 8 \checkmark$ $\frac{3y}{3} = \frac{-x}{3} + \frac{8}{3} \checkmark$ $y = -\frac{1}{3}x + \frac{8}{3} \checkmark$ x - 3y = -x + 8 x - x + 3y = -x + 8 $\frac{3y}{3} = \frac{-x}{3} + \frac{8}{3}$ $y = -\frac{1}{3}x + \frac{8}{3}$ $4x - 7y = 10\checkmark$ $4x - 7y = 10\checkmark$ $4x - 7y = -4x + 10\checkmark$ $-\frac{7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$ $y = \frac{4}{7}x - \frac{10}{7} \checkmark$ $4x - 7y = -4x + 10\checkmark$ $-\frac{7y}{-7} = \frac{-4x}{-7} + \frac{10}{-7} \checkmark$ $y = \frac{4}{7}x - \frac{10}{7} \checkmark$ $m = -\frac{1}{3} \checkmark, b = \frac{8}{3}$ $m = -\frac{1}{3} \checkmark, b = \frac{8}{3}$ $m = \frac{4}{7} \checkmark, b = -\frac{10}{7}$ $m = \frac{4}{7} \checkmark, b = -\frac{10}{7} \checkmark$ $x-3y=8 \checkmark$ $x-3y=8 \checkmark$ $x - x - 3y = -x + 8 \checkmark$ $x - x - 3y = -x + 8 \checkmark$ ∴ Consistent and Independent ✓ ∴ Consistent and Independent 🗸

Activity 1.7.3: Systems of Linear Equations in Two Variables

Total points = 60

Answers

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

 $m = -4\checkmark, b = 1\checkmark$ ∴ Inconsistent and Independent ✓ 2. x - 2y = 9

2.
$$x - 2y = 9 \checkmark$$

$$x - x - 2y = -x + 9 \checkmark$$

$$\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2} \checkmark$$

$$y = \frac{1}{2}x - \frac{9}{2} \checkmark$$

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

$$x + 3y = 14\checkmark$$

 $x+3y=14 \checkmark$

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

∴ Consistent and Independent 🗸 3. $x + 3y = 8 \checkmark$ $x - x + 3y = -x + 8 \checkmark$

.
$$x + 3y = 8$$
 \(\square \cdot x - x + 3y = -x + 8 \square \)
 $\frac{3y}{3} = \frac{-x}{3} + \frac{8}{3} \square \)
 $y = -\frac{1}{3}x + \frac{8}{3} \square \)
 $m = -\frac{1}{3} \checkmark, b = \frac{8}{3} \checkmark$
 $x - 3y = 8 \checkmark$
 $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 $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$ 2 $y = 3x - \frac{5}{2} \checkmark$

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

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

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

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

 $m = \frac{4}{7} \checkmark, b = -\frac{10}{7} \checkmark$ ∴ Consistent and Independent 🗸

Activity 1.7.3: Systems of Linear Equations in Two Variables

Total points = 60

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

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

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

 $m = -4\checkmark, b = 1\checkmark$ ∴ Inconsistent and Independent ✓ 2. x - 2y = 9x - 2y = 3 x - x - 2y = -x + 9 $\frac{-2y}{-2} = \frac{-x}{-2} + \frac{9}{-2}$ $y = \frac{1}{2}x - \frac{9}{2}$

 $m = \frac{1}{2} \checkmark, b = -\frac{9}{2} \checkmark$ $x + 3y = 14 \checkmark$

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

 $x-3y=8 \checkmark$

x - x - 3y = -x + 8

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

∴ Consistent and Independent 🗸 $2y = 6x - 5 \checkmark$ $\frac{2y}{2} = \frac{6x}{2} - \frac{5}{2}$ $y = 3x - \frac{5}{2} \checkmark$ $m = ^{\circ}$

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

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

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

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

 $3x + 5y = 15\checkmark$ $3x - 3x + 5y = -3x + 15\checkmark$ $\frac{5y}{5} = \frac{-3x}{5} + \frac{15}{5} \checkmark$ $y = -\frac{3}{5}x + 3\checkmark$ $m = -\frac{3}{5}\checkmark, b = 3\checkmark$ $4x - 7y = 10\checkmark$

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

∴ Consistent and Independent 🗸