Activity 1.5.2: Forms of Linear Equations

Total points = 49

A. Answers

$$\begin{array}{ll} \frac{1}{2x} & y = -2x + 6 \checkmark \\ & 2x + y = -2x + 2x + 6 \checkmark \\ & 2x + y = 6 \checkmark \end{array}$$

2.
$$y = 3x - 8$$

 $-3x + y = 3x - 3x - 8$
 $-1[-3x + y = -8]$

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

3. $y = \frac{1}{2}x + 3 \checkmark$

3.
$$y = \frac{1}{2}x + 3$$

 $-\frac{1}{2}x + y = \frac{1}{2}x - \frac{1}{2}x + 3$
 $-2\left[-\frac{1}{2}x + y = 3\right]$ \checkmark

$$x - 2y = -6$$

B. Answers

1.
$$x + 2y = 4$$
 \checkmark
 $x - x + 2y = -x + 4$ \checkmark
 $\frac{2y}{2} = \frac{-x}{2} + \frac{4}{2}$ \checkmark

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

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

2.
$$5x + 2y = 7$$

 $5x - 5x + 2y = -5x + 7$
 $\frac{2y}{2} = \frac{-5x}{2} + \frac{7}{2}$
 $y = -\frac{5}{2}x + \frac{7}{2}$
 $m = -\frac{5}{2}\sqrt{b} + \frac{7}{2}$

3.
$$5x - 7y = 2$$

 $5x - 5x - 7y = -5x + 2$
 $\frac{-7y}{-7} = \frac{-5x}{-7} + \frac{2}{-7}$
 $y = \frac{5}{7}x - \frac{2}{7}$

4.
$$y = 2x + \frac{1}{4}$$

$$-2x + y = 2x - 2x + \frac{1}{4} \checkmark$$

$$-4 \left[-2x + y = \frac{1}{4} \right] \checkmark$$

$$8x - 4y = -1 \checkmark$$

5.
$$y = \frac{5}{4}x + \frac{3}{8}$$

5. $y = \frac{5}{4}x + \frac{3}{8}$
 $-\frac{5}{4}x + y = \frac{5}{4}x - \frac{5}{4}x + \frac{3}{8}$
 $-8\left[-\frac{5}{4}x + y = \frac{3}{8}\right]$
 $10x - 8y = -3$

$$m = \frac{5}{7}, b = -\frac{2}{7}$$

4.
$$\frac{2}{3}x - \frac{1}{3}y = 1$$

 $\frac{2}{3}x - \frac{2}{3}x - \frac{1}{3}y = -\frac{2}{3}x + 1$
 $-3\left[-\frac{1}{3}y = -\frac{2}{3}x + 1\right]$
 $y = 2x - 3$
 $m = 2\checkmark$, $b = -3\checkmark$

$$m = 2\sqrt{, b} = -3\sqrt{}$$
5. $\frac{2}{3}x - \frac{1}{5}y = \frac{3}{5}\sqrt{}$
 $\frac{2}{3}x - \frac{2}{3}x - \frac{1}{5}y = -\frac{2}{3}x + \frac{3}{5}\sqrt{}$
 $-5\left[-\frac{1}{5}y = -\frac{2}{3}x + \frac{3}{5}\right]\sqrt{}$
 $y = \frac{10}{3}x - 3\sqrt{}$
 $m = \frac{10}{3}\sqrt{, b} = -3\sqrt{}$

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A. Answers

$$\begin{array}{ll} \frac{1}{2} & 1. & y = -2x + 6 \checkmark \\ & 2x + y = -2x + 2x + 6 \checkmark \\ & 2x + y = 6 \checkmark \end{array}$$

$$\begin{array}{lll} \overset{\text{k}}{\cancel{2}} \mathbf{2}. & y = 3x - 8 \checkmark \\ & & -3x + y = 3x - 3x - 8 \checkmark \\ & & -1[-3x + y = -8] \checkmark \\ & & 3x - y = 8 \checkmark \end{array}$$

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

$$3. \quad y = \frac{1}{2}x + 3 \checkmark$$

$$-\frac{1}{2}x + y = \frac{1}{2}x - \frac{1}{2}x + 3 \checkmark$$

$$-2\left[-\frac{1}{2}x + y = 3\right] \checkmark$$

$$x - 2y = -6 \checkmark$$

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

2.
$$5x + 2y = 7$$

 $5x - 5x + 2y = -5x + 7$
 $\frac{2y}{2} = \frac{-5x}{2} + \frac{7}{2}$
 $y = -\frac{5}{2}x + \frac{7}{2}$
 $m = -\frac{5}{2}\sqrt{b} = \frac{7}{2}\sqrt{c}$

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 $\frac{-7y}{-7} = \frac{-5x}{-7} + \frac{2}{-7}$
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4.
$$y = 2x + \frac{1}{4}$$
 \checkmark $-2x + y = 2x - 2x + \frac{1}{4}$ \checkmark $-4\left[-2x + y = \frac{1}{4}\right]$ \checkmark

$$8x - 4y = -1 \checkmark$$
5. $y = \frac{5}{4}x + \frac{3}{8} \checkmark$

$$-\frac{5}{4}x + y = \frac{5}{4}x - \frac{5}{4}x + \frac{3}{8} \checkmark$$

$$-8\left[-\frac{5}{4}x + y = \frac{3}{8}\right] \checkmark$$

$$10x - 8y = -3 \checkmark$$

$$m = \frac{5}{7}, b = -\frac{2}{7}$$
4. $\frac{2}{3}x - \frac{1}{3}y = 1$

$$\frac{2}{3}x - \frac{2}{3}x - \frac{1}{3}y = -\frac{2}{3}x + 1$$

$$-3\left[-\frac{1}{3}y = -\frac{2}{3}x + 1\right]$$

$$y = 2x - 3$$

$$m = 2\sqrt{b} = -3\sqrt{a}$$

$$y = 2x - 3 \checkmark$$

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

$$\frac{2}{3}x - \frac{2}{3}x - \frac{1}{5}y = -\frac{2}{3}x + \frac{3}{5}\checkmark$$

$$-5\left[-\frac{1}{5}y = -\frac{2}{3}x + \frac{3}{5}\right]\checkmark$$

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B. Answers 1. x + 2y = 4

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$$5x - 5x + \frac{7}{2}$$

$$2 2 x = -\frac{5}{2} \checkmark, b = \frac{7}{2} \checkmark$$

$$3. 5x - 7y = 2 \checkmark$$

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

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

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