

Linear Equations (E)

Use the given points to determine the slope using $\frac{y_2 - y_1}{x_2 - x_1}$

Determine the y-intercept using $b = y - mx$. Write the equation in $y = mx + b$ form.

1. Points: $(1, -6)$ $(1, 0)$

2. Points: $(-2, 8)$ $(-2, 7)$

3. Points: $(3, -1)$ $(-9, -2)$

4. Points: $(7, 4)$ $(-2, -5)$

5. Points: $(8, 8)$ $(7, -9)$

6. Points: $(0, -6)$ $(-2, 9)$

7. Points: $(3, -3)$ $(1, -2)$

8. Points: $(1, -3)$ $(7, -4)$

9. Points: $(7, 4)$ $(-2, 3)$

10. Points: $(4, -3)$ $(-4, -6)$

Linear Equations (E) Answers

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Determine the y-intercept using $b = y - mx$. Write the equation in $y = mx + b$ form.

1. Points: (1, -6) (1, 0)

$$m = \frac{0 - (-6)}{1 - 1} = \frac{6}{0} = \text{undefined}$$

$$x = 1$$

2. Points: (-2, 8) (-2, 7)

$$m = \frac{7 - 8}{-2 - (-2)} = \frac{-1}{0} = \text{undefined}$$

$$x = -2$$

3. Points: (3, -1) (-9, -2)

$$m = \frac{-2 - (-1)}{-9 - 3} = \frac{-1}{-12} = \frac{1}{12}$$

$$b = -1 - \frac{1}{12}(3) = -1\frac{1}{4}$$

$$y = \frac{1}{12}x - 1\frac{1}{4}$$

4. Points: (7, 4) (-2, -5)

$$m = \frac{-5 - 4}{-2 - 7} = \frac{-9}{-9} = 1$$

$$b = 4 - 1(7) = -3$$

$$y = x - 3$$

5. Points: (8, 8) (7, -9)

$$m = \frac{-9 - 8}{7 - 8} = \frac{-17}{-1} = 17$$

$$b = 8 - 17(8) = -128$$

$$y = 17x - 128$$

6. Points: (0, -6) (-2, 9)

$$m = \frac{9 - (-6)}{-2 - 0} = \frac{15}{-2} = -\frac{15}{2}$$

$$b = -6 - (-\frac{15}{2}(0)) = -6$$

$$y = -\frac{15}{2}x - 6$$

7. Points: (3, -3) (1, -2)

$$m = \frac{-2 - (-3)}{1 - 3} = \frac{1}{-2} = -\frac{1}{2}$$

$$b = -3 - (-\frac{1}{2}(3)) = -1\frac{1}{2}$$

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

8. Points: (1, -3) (7, -4)

$$m = \frac{-4 - (-3)}{7 - 1} = \frac{-1}{6} = -\frac{1}{6}$$

$$b = -3 - (-\frac{1}{6}(1)) = -2\frac{5}{6}$$

$$y = -\frac{1}{6}x - 2\frac{5}{6}$$

9. Points: (7, 4) (-2, 3)

$$m = \frac{3 - 4}{-2 - 7} = \frac{-1}{-9} = \frac{1}{9}$$

$$b = 4 - \frac{1}{9}(7) = 3\frac{2}{9}$$

$$y = \frac{1}{9}x + 3\frac{2}{9}$$

10. Points: (4, -3) (-4, -6)

$$m = \frac{-6 - (-3)}{-4 - 4} = \frac{-3}{-8} = \frac{3}{8}$$

$$b = -3 - \frac{3}{8}(4) = -4\frac{1}{2}$$

$$y = \frac{3}{8}x - 4\frac{1}{2}$$