

Linear Equations (A) Answers

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: $(1, -7)$ $(-5, 0)$

$$m = \frac{0 - (-7)}{-5 - 1} = \frac{7}{-6} = -\frac{7}{6}$$

$$b = -7 - \left(-\frac{7}{6}(1)\right) = -5\frac{5}{6}$$

$$y = -\frac{7}{6}x - 5\frac{5}{6}$$

2. Points: $(6, 9)$ $(-4, -2)$

$$m = \frac{-2 - 9}{-4 - 6} = \frac{-11}{-10} = \frac{11}{10}$$

$$b = 9 - \frac{11}{10}(6) = 2\frac{2}{5}$$

$$y = \frac{11}{10}x + 2\frac{2}{5}$$

3. Points: $(8, -6)$ $(6, 8)$

$$m = \frac{8 - (-6)}{6 - 8} = \frac{14}{-2} = -7$$

$$b = -6 - (-7(8)) = 50$$

$$y = -7x + 50$$

4. Points: $(4, 1)$ $(-6, 4)$

$$m = \frac{4 - 1}{-6 - 4} = \frac{3}{-10} = -\frac{3}{10}$$

$$b = 1 - \left(-\frac{3}{10}(4)\right) = 2\frac{1}{5}$$

$$y = -\frac{3}{10}x + 2\frac{1}{5}$$

5. Points: $(6, -7)$ $(8, 5)$

$$m = \frac{5 - (-7)}{8 - 6} = \frac{12}{2} = 6$$

$$b = -7 - 6(6) = -43$$

$$y = 6x - 43$$

6. Points: $(8, 7)$ $(-6, 4)$

$$m = \frac{4 - 7}{-6 - 8} = \frac{-3}{-14} = \frac{3}{14}$$

$$b = 7 - \frac{3}{14}(8) = 5\frac{2}{7}$$

$$y = \frac{3}{14}x + 5\frac{2}{7}$$

7. Points: $(5, -6)$ $(-4, 2)$

$$m = \frac{2 - (-6)}{-4 - 5} = \frac{8}{-9} = -\frac{8}{9}$$

$$b = -6 - \left(-\frac{8}{9}(5)\right) = -1\frac{5}{9}$$

$$y = -\frac{8}{9}x - 1\frac{5}{9}$$

8. Points: $(-1, 6)$ $(8, 6)$

$$m = \frac{6 - 6}{8 - (-1)} = \frac{0}{9} = 0$$

$$b = 6 - 0(-1) = 6$$

$$y = 6$$

9. Points: $(2, 7)$ $(0, 7)$

$$m = \frac{7 - 7}{0 - 2} = \frac{0}{-2} = 0$$

$$b = 7 - 0(2) = 7$$

$$y = 7$$

10. Points: $(2, -7)$ $(-9, 9)$

$$m = \frac{9 - (-7)}{-9 - 2} = \frac{16}{-11} = -\frac{16}{11}$$

$$b = -7 - \left(-\frac{16}{11}(2)\right) = -4\frac{1}{11}$$

$$y = -\frac{16}{11}x - 4\frac{1}{11}$$