

Name

Date



LINEAR EQUATION FROM TWO POINTS SHEET 2

- Take the two points (x_1, y_1) and (x_2, y_2) .
- Use the equation $m = (y_2 - y_1)/(x_2 - x_1)$ to determine the slope.
- Then use $y = mx + c$ and one of the points for the x and y values to determine the value of c .
- This gives you the equation of the line $y = mx + c$.

1) Points $(-3, 6)$ and $(-2, 11)$

2) Points $(5, -2)$ and $(9, -10)$

3) Points $(6, 1)$ and $(14, 3)$

4) Points $(4, -12)$ and $(-1, 13)$

5) Points $(-1, -12)$ and $(3, 16)$

6) Points $(4, -5)$ and $(20, -17)$

7) Points $(-3, 11)$ and $(7, -9)$

8) Points $(-1, -1)$ and $(8, 5)$



LINEAR EQUATION FROM TWO POINTS SHEET 2 ANSWERS

- 1) Points (-3, 6) and (-2, 11)

$$m = (11 - 6)/(-2 - (-3)) = 5/1 = 5$$

$$y = mx + c \text{ so this means } y = 5x + c$$

Use the point (-3, 6)

$$\text{Substitute values } 6 = 5(-3) + c$$

$$c = 6 + 15 = 21$$

$$\text{So } y = 5x + 21$$

- 2) Points (5, -2) and (9, -10)

$$m = (-10 - (-2))/(9 - 5) = -8/4 = -2$$

$$y = mx + c \text{ so this means } y = -2x + c$$

Use the point (5, -2)

$$\text{Substitute values } -2 = -2(5) + c$$

$$-2 = -10 + c \text{ so } c = -2 + 10 = 8$$

$$\text{So } y = -2x + 8 \text{ or } y = 8 - 2x$$

- 3) Points (6, 1) and (14, 3)

$$m = (3 - 1)/(14 - 6) = 2/8 = \frac{1}{4}$$

$$y = mx + c \text{ so this means } y = \frac{1}{4}x + c$$

Use the point (6, 1)

$$\text{Substitute values } 1 = \frac{1}{4}(6) + c$$

$$c = 1 - 3/2 = -\frac{1}{2}$$

$$\text{So } y = \frac{1}{4}x - \frac{1}{2}$$

- 4) Points (4, -12) and (-1, 13)

$$m = (13 - (-12))/(-1 - 4) = 25/(-5) = -5$$

$$y = mx + c \text{ so this means } y = -5x + c$$

Use the point (4, -12)

$$\text{Substitute values } -12 = -5(4) + c$$

$$c = -12 + 20 = 8$$

$$\text{So } y = -5x + 8 \text{ or } y = 8 - 5x$$

- 5) Points (-1, -12) and (3, 16)

$$m = (16 - (-12))/(3 - (-1)) = 28/4 = 7$$

$$y = mx + c \text{ so this means } y = 7x + c$$

Use the point (3, 16)

$$\text{Substitute values } 16 = 7(3) + c$$

$$c = 16 - 21 = -5$$

$$\text{So } y = 7x - 5$$

- 6) Points (4, -5) and (20, -17)

$$m = (-17 - (-5))/(20 - 4) = -12/16 = -\frac{3}{4}$$

$$y = mx + c \text{ so this means } y = -\frac{3}{4}x + c$$

Use the point (4, -5)

$$\text{Substitute values } -5 = -\frac{3}{4}(4) + c$$

$$c = -5 + 3 = -2$$

$$\text{So } y = -\frac{3}{4}x - 2$$

- 7) Points (-3, 11) and (7, -9)

$$m = (-9 - 11)/(7 - (-3)) = -20/10 = -2$$

$$y = mx + c \text{ so this means } y = -2x + c$$

Use the point (-3, 11)

$$\text{Substitute values } 11 = -2(-3) + c$$

$$c = 11 - 6 = 5$$

$$\text{So } y = -2x + 5 \text{ or } y = 5 - 2x$$

- 8) Points (-1, -1) and (8, 5)

$$m = (5 - (-1))/(8 - (-1)) = 6/9 = \frac{2}{3}$$

$$y = mx + c \text{ so this means } y = \frac{2}{3}x + c$$

Use the point (-1, -1)

$$\text{Substitute values } -1 = \frac{2}{3}(-1) + c$$

$$c = -1 + 2/3 = -1/3$$

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