

How Do We Write An Equation From A Table Of Values?

1) Provided the table of values, which equation correctly represents the relationship between  $x$  and  $y$ .

$$y = mx + b$$

$$m = 2$$

$$b = -3$$

$$y = 2x - 3$$

x	y
2	1
3	3
5	7
7	11

a)  $y = 2x - 3$

$$\begin{matrix} (2, 1) \\ x_1, y_1 \end{matrix}$$

$$\begin{matrix} (3, 3) \\ x_2, y_2 \end{matrix}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

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

$$m = \frac{2}{1}$$

$$m = 2$$

b)  $y = x + 2$

c)  $y = 2x + 3$

d)  $y = 2x + 2$

$$y = mx + b$$

$$1 = (2)(2) + b$$

$$1 = 4 + b$$

$$-3 = b$$

$$m = 2 \quad \begin{matrix} (2, 1) \\ x_1, y_1 \end{matrix}$$

2) Provided the table of values, write an equation which correctly represents the relationship between  $x$  and  $y$ .

$$y = mx + b$$

$$m = 1$$

$$b = 4$$

$$y = x + 4$$

x	y
1	5
2	6
3	7
4	8

$$\begin{matrix} (1, 5) \\ x_1, y_1 \end{matrix} \quad \begin{matrix} (2, 6) \\ x_2, y_2 \end{matrix}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{6 - 5}{2 - 1}$$

$$m = 1 \quad m = 1$$

$$y = mx + b \quad m = 1 \quad \begin{matrix} (1, 5) \\ x_1, y_1 \end{matrix}$$

$$5 = (1)(1) + b$$

$$5 = 1 + b$$

$$-1 = b$$

$$4 = b$$

3) Complete the table below with the missing values for y.

$$y = mx + b$$

$$m = 3$$

$$b = 4$$

$$y = 3x + 4$$

x	y
-1	1
0	4
1	7
2	10
3	13
4	16

$$\begin{matrix} (-1, 1) & (0, 4) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{4 - 1}{0 - (-1)} \quad m = \frac{3}{1} \quad m = 3$$

$$y = mx + b \quad m = 3 \quad (-1, 1)$$

$$1 = (3)(-1) + b$$

$$1 = -3 + b$$

$$\begin{array}{r} +3 \\ \hline 4 = b \end{array}$$

Based on the data in the table, write the equation that represents the relationship between x and y.

Answer  $y = 3x + 4$

4) Complete the table below with the missing values for y.

$$y = mx + b$$

$$m = -3$$

$$b = 2$$

x	y
-4	14
-3	11
-2	8
-1	5
0	2
1	-1

$$\begin{matrix} (-4, 14) & (-3, 11) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad m = \frac{11 - 14}{-3 - (-4)} \quad m = \frac{-3}{1} = -3$$

$$y = mx + b \quad (-4, 14) \quad m = -3$$

$$14 = -3(-4) + b$$

$$14 = 12 + b$$

$$\begin{array}{r} -12 \\ \hline 2 = b \end{array}$$

On the line below, write a function rule that shows the relationship between x and y in the table.

Equation

$$y = -3x + 2$$

5) The table below shows a relationship between  $x$  and  $y$ .

$m=1$   
 $b=4$

$x$	2	5	6	9
$y$	6	9	10	13

$y = x + 4$

Which equation shows the relationship between  $x$  and  $y$ ?

- A  $y = 3x$
- B  $x = 3y$
- C  $y = x + 4$
- D  $x = y + 4$

$(2, 6)$   $(5, 9)$   
 $x_1, y_1$   $x_2, y_2$   
 $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 6}{5 - 2} = \frac{3}{3} = 1$

$(2, 6)$   $m=1$   
 $x, y$   
 $y = mx + b$   
 $6 = 1(2) + b$   
 $6 = 2 + b$   
 $-2 / -2$   
 $4 = b$

6) The table below shows a relationship between  $x$  and  $y$ .

$y = mx + b$   
 $m = 1$   
 $b = 6$

$x$	$y$
2	8
4	10
6	12
8	14
10	16

$(2, 8)$   $(4, 10)$   
 $x_1, y_1$   $x_2, y_2$   
 $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 8}{4 - 2} = \frac{2}{2} = 1$

$m = 1$

$(2, 8)$   $m=1$   
 $x, y$   
 $y = mx + b$   
 $8 = 1(2) + b$   
 $8 = 2 + b$   
 $-2 / -2$   
 $6 = b$   
 $y = x + 6$

What equation represents the relationship between  $x$  and  $y$ ?

- A  $y = 2x$
- B  $y = 4x$
- C  $y = x + 6$
- D  $y = 2x + 2$

Go On

