WRITE EQUATIONS IN SLOPE-INTERCEPT FORM: TABLES

When the values in a table change at a constant rate, the table shows a linear function. You can also show a linear function using an equation in slope-intercept form:

$$y = mx + b$$

In slope-intercept form, m is the slope and b is the y-intercept. The y-intercept is the value of y where the line crosses the y-axis, or the value of y when $x = 0$.

Write an equation in slope-intercept form for the linear function in the table below.

First, find the slope. Find the change in y and change in x for each row of the table. Then, divide.

x	y	
2	8	
3	10	+2
4	12	+2
5	14	+2
+1	+1	+1

$$m = \frac{\text{change in } y}{\text{change in } x}$$

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

So, the slope is 2.

Next, find the y-intercept. If the table includes $x = 0$, the corresponding y-value is the y-intercept. Otherwise, you will need to solve $y = mx + b$ for the y-intercept:

$y = mx + b$

$y = 2x + b$ — *Plug in the slope you found, 2, for m.*

$8 = 2(2) + b$ — *Plug in the x- and y-values from a row in the table. Let's use x = 2 and y = 8.*

$8 = 4 + b$ — *Simplify. Then solve for b.*

$4 = b$ — *So, the y-intercept is 4.*

Last, write the equation in slope-intercept form: $y = 2x + 4$.

Practice! Each table represents a linear function. Find each slope and y-intercept. Then write an equation for each function in slope-intercept form.

x	y
0	12
1	15
2	18
3	21

slope: _____ y-intercept: _____

equation: _____

x	y
0	8
1	7
2	6
3	5

slope: _____ y-intercept: _____

equation: _____

WRITE EQUATIONS IN SLOPE-INTERCEPT FORM: TABLES

Keep going! Each table represents a linear function. Find each slope and *y*-intercept. Then write an equation for each function in slope-intercept form.

x	*y*
0	−20
1	−15
2	−10
3	−5

slope: _____ *y*-intercept: _____

equation: _____

x	*y*
2	10
3	14
4	18
5	22

slope: _____ *y*-intercept: _____

equation: _____

x	*y*
4	9
6	10
8	11
10	12

slope: _____ *y*-intercept: _____

equation: _____

x	*y*
7	−11
10	−5
13	1
16	7

slope: _____ *y*-intercept: _____

equation: _____

x	*y*
5	4
10	6
15	8
20	12

slope: _____ *y*-intercept: _____

equation: _____

x	*y*
6	−13
9	−17
12	−21
15	−25

slope: _____ *y*-intercept: _____

equation: _____