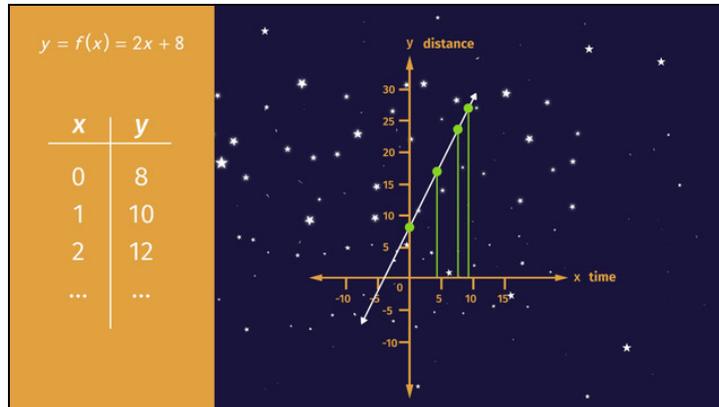




Printable Worksheets from [sofatutor.com](https://www.sofatutor.com)

Graphing Functions



- 1 Explain how to draw the graph of the function $y = 2x + 8$
 - 2 Describe how the given graph represents a function.
 - 3 Decide which graphs represent functions.
 - 4 Complete the function table for the function $y = 2x^2 + 3$.
 - 5 Decide which stars belong to the graph of the function.
 - 6 Match the graph with its corresponding function.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



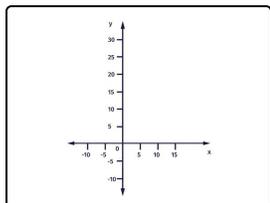
Explain how to draw the graph of the function $y = 2x + 8$.

Fill in the blanks.

$y = 2x + 8$ is a linear function written in slope intercept form.

2 is the slope and 8 the y -intercept.

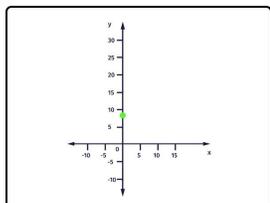
y-axis x any x-intercept y-intercept (x, y) x y-axis x-axis
 y function table



First draw a coordinate system: The horizontal axis is the

.....¹ and the vertical axis is the

.....².



Next plot the point $(0, 8)$. This is the point where the graph intersects the

.....³, also known as the⁴.

$y = f(x) = 2x + 8$

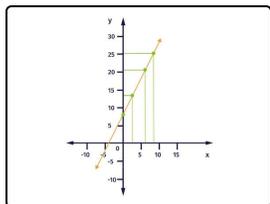
x	0	1	2	...
y	8	10	12	...

We can construct a⁵ by plugging x values into $f(x) = 2x + 8$ to get y values.

For each⁶ we get exactly one

.....⁷.

For example, when $x = 1$ we have that $y = 2 \times 1 + 8 = 10$.



For each⁸, one draws a line to the corresponding y , as seen with the green lines in the picture to the left.

By connecting all the points⁹, one obtains the graph of the function.

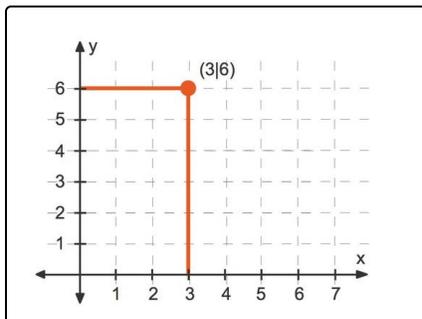


Hints for solving these problems

1
of 6

Explain how to draw the graph of the function $y = 2x + 8$.

Hint #1



Here you see how to plot the point $(3, 6)$ in a coordinate system.

Hint #2

You can write a linear function as $f(x) = 2x + 8$, as well as $y = 2x + 8$.

Hint #3

$$y = 2 \times 3 + 8 = 6 + 8 = 14$$

The y corresponding to $x = 3$ is $y = 2 \times 3 + 8 = 6 + 8 = 14$.

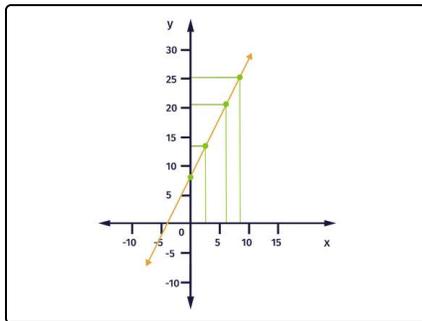


Answers and detailed answer explanations for these problems

1
of 6

Explain how to draw the graph of the function $y = 2x + 8$.

Answer key: 1: x-axis // 2: y-axis // 3: y-axis // 4: y-intercept // 5: function table // 6: x // 7: y // 8: x // 9: (x, y)



To draw the graph of a function, first we need to draw a coordinate system with a horizontal line, the x -axis, and a vertical one, the y -axis.

You can either draw a line corresponding to a linear function by drawing the y -intercept and then use the slope to determine the other points on the line (Remember: the slope is given by rise over run), or you can figure out a function table of (x, y) pairs.

To get these pairs, plug each x value into the function; for example, the y coordinate at $x = 0$ is $f(0) = 2 \times 0 + 8 = 8$. So the pair we get is $(0, 8)$.

From the function table, the graph of the function can be drawn by plotting the points from the function table on the coordinate system and drawing a line connecting all of the points.