

Section Overview



Integer Equations

Lesson 11-8

Why? Solving equations is necessary in many problem-solving situations.

When solving equations with integers, the goal is the same as with whole numbers—use the inverse of the operation on the variable to isolate the variable on one side of the equation.

$$\begin{aligned} x + 10 &= -54 \\ x &\overset{-10}{-10} = \overset{-10}{-64} \end{aligned}$$

$$\begin{aligned} -175x &= -14,000 \\ \frac{-175x}{-175} &= \frac{-14,000}{-175} \\ x &= 80 \end{aligned}$$

Tables and Functions

Lesson 11-9

Why? You can use a function to convert between customary units and metric units.

A **function** is a rule that relates two variables such that each **input** value of one variable corresponds to exactly one **output** value of the other variable.

A function table shows some of the values for a function.

Input x	3	4	5	6	10
Output y	7	9	11	13	

You can write an equation for the function that gives these values and use the equation to find the missing output value.

Each **output** is 1 more than 2 times the **input**.

$$y = 2 \text{ times } x \text{ plus } 1$$

$$y = 2x + 1$$

$$y = 2(10) + 1$$

$$y = 20 + 1$$

$$y = 21$$

When x is 10, y is 21.

Graphing Functions

Lesson 11-10

Why? You can use the graph of the linear relationship between degrees Celsius and kelvins to convert temperatures.

Graph the function described by the equation $y = 2x + 1$.

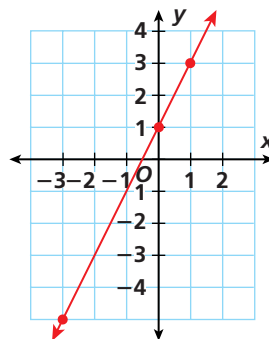
Make a function table.

x	$2x + 1$	y
-3	$2(-3) + 1$	-5
0	$2(0) + 1$	1
1	$2(1) + 1$	3

Write the ordered pairs.

(x, y)
 $(-3, -5)$
 $(0, 1)$
 $(1, 3)$

Graph the ordered pairs on a coordinate plane. Draw a line through the points.



When you graph the ordered pairs of a function, the points may form a straight line. An equation for such a function is called a **linear equation**.

Every point on the line represents a solution to the equation.