

Lesson 2-3

Example 1

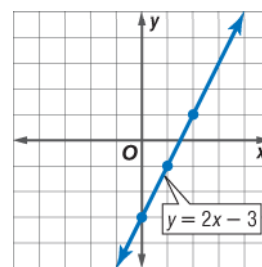
Graph $y = 2x - 3$.

Solution

Choose at least three values for x , calculate the corresponding y -values, and make a table to show the ordered pairs.

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

Then plot the points and draw the line containing them. The domain is the set of all real numbers. The range is the set of all real numbers.



Example 2

Graph each relation. Determine if the relation is a function. Then determine the domain and range.

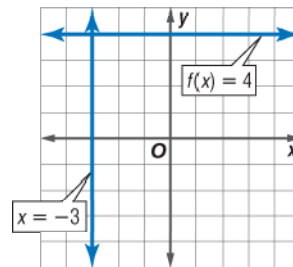
a. $x = -3$

b. $f(x) = 4$

Solution

a. Any value of y results in an x value equal to -3 .
 $x = -3$ is not a function.
 Domain: $x = -3$ Range: set of all real numbers.

b. Any value of x results in an $f(x)$ value equal to 4 .
 $f(x) = 4$ is a linear constant function.
 Domain: set of all real numbers Range: $y = 4$



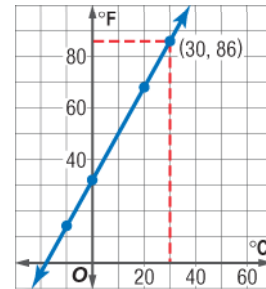
Example 3

TEMPERATURE The relationship between the scales used to measure temperature in degrees Fahrenheit (F) and degrees Celsius (C) can be represented by the linear equation $F = \frac{9}{5}C + 32$. Graph this function and determine the Fahrenheit temperature that is equivalent to 30°C .

Solution

Select three values for C . Calculate the corresponding F -values. Then plot the points and draw the line. Find the point that has an x -coordinate of 30. The second coordinate of that point, 86, is the equivalent temperature measured in degrees Fahrenheit.

$^{\circ}\text{C}$	$^{\circ}\text{F}$
-10	14
0	32
20	68

**Example 4**

Given $g(x) = |x - 4|$, evaluate the given function.

a. $g(10)$

b. $g(3)$

Solution

$$\begin{aligned} \text{a. } g(10) &= |10 - 4| \\ &= |6| \\ &= 6, \text{ because } 6 \geq 0 \end{aligned}$$

$$\begin{aligned} \text{b. } g(3) &= |3 - 4| \\ &= |-1| \\ &= 1, \text{ because } 1 \geq 0 \end{aligned}$$

Example 5

GRAPHING Use a graphing calculator to graph $y = x + 2$.

Solution

Calculator input: `Y=` `X, T, θ, n` `+` `2` `GRAPH`

Settings for Viewing Window

