

## Exercise 29

Find the point at which the line  $f(x) = 2x + 5$  intersects the line  $g(x) = -3x - 5$ .

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### Solution

At the point of intersection, the two functions are equal.

$$f(x) = g(x)$$

$$2x + 5 = -3x - 5$$

Solve for  $x$ .

$$2x + 3x = -5 - 5$$

$$5x = -10$$

$$x = -2$$

Now plug this value of  $x$  into either of the functions to get the corresponding  $y$ -value.

$$f(-2) = 2(-2) + 5 = 1$$

Therefore, the point of intersection is  $(-2, 1)$ .

