Exercise 28

Find the point at which the line $f(x) = -2x - 1$ intersects the line $g(x) = -x$.

Solution

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

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

$$-2x - 1 = -x$$

Solve for x.

$$-1 = -x + 2x$$

$$x = -1$$

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

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

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