## Exercise 10

Does the following table represent a linear function? If so, find the linear equation that models the data.

| $x$ | −4 | 0 | 2 | 10 |
|---|---|---|---|---|
| $g(x)$ | 18 | −2 | −12 | −52 |

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**Solution**

The table does represent a linear function. Use two points, $(-4, 18)$ and $(0, -2)$, to determine the line's slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 18}{0 - (-4)} = \frac{-20}{4} = -5$$

Then use the point-slope formula with either of the two points to obtain the equation of the line.

$$y - (-2) = -5(x - 0)$$

$$y + 2 = -5x$$

$$y = -5x - 2$$