# Linear Functions & Equations

1. A function assigns the inputs and corresponding outputs shown in the table below.

a) Does the function appear to be linear? Check at least three pairs of inputs and their corresponding outputs.

| Input | Output |
|---|---|
| $-6$ | $-6$ |
| $-5$ | $-5$ |
| $-4$ | $-4$ |
| $-2$ | $-2$ |

b) Can you write a linear equation that describes the function?

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$$\frac{-6-(-5)}{-6-(-5)} = \frac{1}{1} = 1$$

$$\frac{-5-(-4)}{-5-(-4)} = \frac{1}{1} = 1$$

$$\frac{-4-(-2)}{-4-(-2)} = \frac{2}{2} = 1$$

*Yes. The rate of change is the same when I check pairs of inputs and corresponding outputs. Each time it is equal to* $1$. *Since the rate of change is constant so far, it could be a linear function.*

b) Can you write a linear equation that describes the function?

*Clearly the equation* $y = x$ *fits the data. It is a linear function.*