

Linear Functions & Equations

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

Input	Output
0.2	2
0.6	6
1.5	15
2.1	21

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

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$$\frac{2 - 6}{0.2 - 0.6} = \frac{-4}{-0.4} = 10$$

$$\frac{6 - 15}{0.6 - 1.5} = \frac{-9}{-0.9} = 10$$

$$\frac{15 - 21}{1.5 - 2.1} = \frac{-6}{-0.6} = 10$$

Yes. The rate of change is the same when I check pairs of inputs and corresponding outputs. Each time it is equal to 10. The function appears to be linear.

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

Using the assignment of 2 to 0.2:

$$2 = 10(0.2) + b$$

$$2 = 2 + b$$

$$0 = b$$

The equation that describes the function is $y = 10x$. It clearly fits the data presented in the table.

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