Functions

1. A function can be described by the rule $y = x^2 + 4$. Determine the corresponding output for each given input.

Input (x)	−3	−2	−1	0	1	2	3	4
Output (y)								

2. Examine the data in the table below. The inputs and outputs represent a situation where constant rate can be assumed. Determine the rule that describes the function.

Input (x)	−1	0	1	2	3	4	5	6
Output (y)	3	8	13	18	23	28	33	38

3. Examine the data in the table below. The inputs represent the number of bags of candy purchased, and the outputs represent the cost. Determine the cost of one bag of candy, assuming the price per bag is the same no matter how much candy is purchased. Then, complete the table.

Bags of Candy (x)	1	2	3	4	5	6	7	8
Cost in Dollars (y)				5.00	6.25			10.00

a) Write the rule that describes the function.

b) Can you determine the value of the output for an input of $x = -4$? If so, what is it?

c) Does an input of -4 make sense in this situation? Explain.

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Input (x)	-3	-2	-1	0	1	2	3	4
Output (y)	13	8	5	4	5	8	13	20

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Input (x)	-1	0	1	2	3	4	5	6
Output (y)	3	8	13	18	23	28	33	38

The rule that describes this function is $y = 5x + 8$.

3. Examine the data in the table below. The inputs represent the number of bags of candy purchased, and the outputs represent the cost. Determine the cost of one bag of candy, assuming the price per bag is the same no matter how much candy is purchased. Then, complete the table.

Bags of Candy (x)	1	2	3	4	5	6	7	8
Cost in Dollars (y)	1.25	2.50	3.75	5.00	6.25	7.50	8.75	10.00

a) Write the rule that describes the function.

$y = 1.25x$

b) Can you determine the value of the output for an input of $x = -4$? If so, what is it?

When $x = -4$, the output is -5.

c) Does an input of -4 make sense in this situation? Explain.

No, an input of -4 does not make sense for the situation. It would mean -4 bags of candy. You cannot purchase -4 bags of candy.

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