

Section 4-5 Writing a Function Rule

Students will be able to create equations that represent functions.

Many real-world functional relationships can be represented by equations.

You can use an equation to find the solution of a given real-world problem.

A landfill has 50,000 tons of waste in it. Each month it accumulates an average of 410 more tons of waste. What is a function rule that represents the total amount of waste after m months?

$$W = 50,000 + 410m$$

A kennel charges \$15 per day to board dogs. Upon arrival, each dog must have a flea bath that costs \$12. Write a function rule for the total cost for n days.

$$C = 15n + 12$$

How much does it cost for a 10-day stay?

$$\$162$$

Does a 5-day stay cost half as much?

Explain.

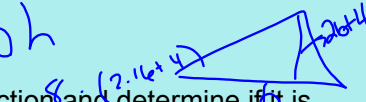
No. \$12 isn't cut in half.

Write a function rule for the area of a triangle whose height is 4 in. more than twice the length of the base. What is the area of the triangle when the base is 16 in?

$$A = \frac{1}{2}bh$$

Graph the function and determine if it is linear.

$A = \frac{1}{2}b(2b+4)$
 $A = 288 \text{ in}^2$
 $b^2 + 2b$
 No



Write the function rule for the following:

1. The almond extract remaining in an 8-oz. bottle remaining after making each batch of cookies that uses 1/6 oz for each batch.

$$a = 8 - \frac{1}{6}b$$

2. You go to dinner and decide to leave a 15% tip. You had \$55 when you went to the restaurant. Make a table showing how much you had left after the meal and tip for a meal that costs \$15, \$21, \$24 and \$30. Write the function rule.

meal cost	15	21	24	30
total cost	17.25			
money left	37.75	30.75		

$W = 55 - (.15x)$

What advantage can you see to having a function rule instead of a table of values to represent a function?

Ex:

x	y
0	6.95
1	7.90
2	8.85
3	9.80
4	10.75

What is the output for an input of 9?

$$P = 6.95 + .95 \cdot 9$$

Write the function rule instead: Your pizza costs \$6.95 plus \$.95 per topping.

How much for 9 toppings?

$$\$15.50$$

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#8 - 30 evens