

# LESSON 19 Representing Functions

## Review It!

You can represent functions as equations, tables, and graphs.

A delivery company charges \$5 per package plus \$2 per pound. Write an equation for finding the cost of delivering a package. Use the equation to make a table for the cost of delivering packages that weigh 1, 2, 3, 4, and 5 pounds.

**Step 1** Write an equation.

Let  $p$  = number of pounds.

$C = \underline{\hspace{1cm}}p + \underline{\hspace{1cm}}$  **THINK** This cost does not change.

**Step 2** Make a table.

$p$ (pounds)	$C = 2p + 5$
1	$C = 2 \times 1 + 5 = 7$
2	$C = 2 \times 2 + 5 = \underline{\hspace{1cm}}$
3	$C = 2 \times 3 + 5 = \underline{\hspace{1cm}}$
$\underline{\hspace{1cm}}$	$C = 2 \times \underline{\hspace{1cm}} + 5 = \underline{\hspace{1cm}}$
$\underline{\hspace{1cm}}$	$C = 2 \times \underline{\hspace{1cm}} + 5 = \underline{\hspace{1cm}}$

**REMEMBER** Multiply before adding.

So, 1 pound costs  $\underline{\hspace{1cm}}$ , 2 pounds costs  $\underline{\hspace{1cm}}$ , 3 pounds costs  $\underline{\hspace{1cm}}$ , 4 pounds costs  $\underline{\hspace{1cm}}$ , and 5 pounds costs  $\underline{\hspace{1cm}}$ .

## Try It!

Complete each table.

1.	$h$	$A = 7h + 15$	2.	$t$	$C = 10t + 4$
	1	$A = 7 \times 1 + 15 = 22$		1	$C = 10 \times 1 + 4 = 14$
	2	$A = 7 \times 2 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$		2	$C = 10 \times \underline{\hspace{1cm}} + 4 = \underline{\hspace{1cm}}$
	3	$A = 7 \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$		3	$C = 10 \times \underline{\hspace{1cm}} + 4 = \underline{\hspace{1cm}}$
	4	$A = 7 \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$		4	$C = 10 \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$
	5	$A = 7 \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$		5	$C = 10 \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

Write an equation for each problem.

3. Horace earns \$12 per hour and gets \$6 each day for gas. Write an equation that can be used to find what he gets,  $T$ , if he works  $h$  hours in one day.

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4. Lisa charges \$25 per hour plus \$17 for designing note cards. Write an equation that can be used to find the total charge,  $C$ , if Lisa works  $h$  hours designing the note cards.

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5. A company charges \$0.50 per mile plus \$10 for delivering groceries. Write an equation that can be used to find the total cost,  $C$ , for delivering groceries  $m$  miles away.

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6. A cell phone company charges \$35 per month plus \$0.02 per minute. Write an equation that can be used to find the monthly cost,  $C$ , for  $m$  minutes in calls.

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1. What is  $7h$  when  $h = 2$ ?  
72, or  $7 \times 2$ ?

2. Should you add first or multiply first?  
add, or multiply?

3. How much is \$12 per hour for 2 hours?  
\$12, or \$24?

Algebra

**On Your Own!**

Circle the best answer for each question.

Use this situation for questions 1–5.

Nancy started a delivery service. She charges \$8 per order plus \$0.15 per mile to deliver.

1. How much will Nancy charge for delivering 12 miles away?

- A. \$9.80      C. \$8.30  
 B. \$9.30      D. \$8.15

2. How much will Nancy charge for delivering 16 miles away?

- A. \$10.50      C. \$10.39  
 B. \$10.40      D. \$10.38

3. How much will Nancy charge for delivering 33 miles away?

- A. \$12.83      C. \$12.95  
 B. \$12.85      D. \$13.90

4. If  $m$  represents the number of miles and  $C$  is the cost of delivery, which equation relates the total cost to the number of miles?

- A.  $C = 8m - 0.15$   
 B.  $C = 8m + 0.15$   
 C.  $C = 0.15m - 8$   
 D.  $C = 0.15m + 8$

5. Which table shows the function that relates the number of miles,  $m$ , and the cost of delivery,  $C$ ?

A.

$m$	$C$
1	8.15
2	8.30
3	8.45
4	8.60
5	8.75

B.

$m$	$C$
1	8.15
2	8.30
3	8.45
4	9.00
5	9.15

C.

$m$	$C$
1	9.50
2	11.00
3	12.50
4	14.00
5	15.50

D.

$m$	$C$
1	0.15
2	0.30
3	0.45
4	0.60
5	0.75

6. A new pack-and-mail store charges \$2 per package plus \$0.03 per ounce of packing material to get a package ready to mail.

**Part A** Write an equation that can be used to find the total cost,  $C$ , for a customer who has a package that uses  $p$  ounces of packing material.

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**Part B** Complete the table that relates the ounces of packing material to the total cost.

$p$	$C =$ _____
1	_____
2	_____
3	_____
4	_____
5	_____

**Math Words**

Fill in the blanks.

7. A problem can be represented by a graph, an \_\_\_\_\_, or a \_\_\_\_\_.

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