

# Dividing a Garden

## Lesson 2-8

DATE

TIME



### Math Message

$$\frac{1}{3} \quad \frac{5}{8}$$

- 1 Sarah's dad received 20 gallons of compost. He plans to use half of it in a vegetable garden. He told Sarah she could have the other half for her flower garden. To figure out how much she will have, Sarah multiplies 20 by  $\frac{1}{2}$ , or  $\frac{1}{2} * 20$ . Her brother Frank tells her that taking half of the compost means dividing 20 by 2, or  $20 \div 2$ .

Who is correct, Sarah or Frank? \_\_\_\_\_

Explain. \_\_\_\_\_

$$\frac{20 \cdot \frac{1}{2}}{1} = \frac{20}{2}$$

For each problem do the following:

- Record the division number model Frank would use.
- Record the multiplication number model Sarah would use.
- Solve the problem.

- 2 Sarah splits 10 gallons of compost equally among 3 planters. Each planter gets the same amount of compost. How much compost will each planter get?

Division number model:  $10 \div 3$  or  $\frac{10}{3}$  Multiplication number model:  $10 \cdot \frac{1}{3} = \frac{10}{3}$

Solution:  $3\frac{1}{3}$  gallons

$$10 \div \frac{1}{3}$$
$$\frac{10 \cdot 3}{1}$$

- 3 Frank splits 10 gallons of compost equally among 11 planters. Each planter gets the same amount of compost. How much compost will each planter get?

Division number model:  $10 \div 11$  or  $\frac{10}{11}$  Multiplication number model:  $10 \cdot \frac{1}{11}$

Solution:  $\frac{10}{11}$  gallons or  $.909$  gallons

$$11 \overline{) 10.00}$$
$$\underline{99}$$
$$100$$
$$\underline{99}$$
$$100$$
$$\underline{99}$$
$$100$$

# Division of Fractions Property

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Lashawn says that every division problem can be rewritten as a multiplication problem using the reciprocal of the divisor.

- 1 Test Lashawn's claim on the problems below. Use any strategy to solve the division and multiplication problems. Compare the solutions.

a.  $\frac{6}{4} \div \frac{1}{2} = \frac{6}{4} \cdot \frac{2}{1} = 3$

b.  $\frac{8}{10} \div \frac{3}{2} = \frac{8}{10} \cdot \frac{2}{3}$

c.  $\frac{2}{6} \div \frac{2}{3} =$  \_\_\_\_\_

d.  $1\frac{1}{2} \div \frac{3}{4} =$  \_\_\_\_\_

- e. Describe how you can rewrite  $3\frac{3}{8} \div \frac{5}{4}$  as an equivalent multiplication problem.

$2\frac{6}{4} \cdot \frac{1}{1} = \frac{6}{2} = 3$

$\frac{8}{10} \cdot \frac{2}{3} =$  \_\_\_\_\_

$\frac{2}{6} \cdot \frac{3}{2} =$  \_\_\_\_\_

$\frac{3}{2} \cdot \frac{4}{3} =$  \_\_\_\_\_

Solve

Use the Division of Fractions Property to solve the problems. Check your answers.

- 2 Rochelle wants to use all of her raisins to bake batches of granola. She has  $\frac{3}{4}$  cup of raisins. Each batch requires  $\frac{1}{8}$  cup of raisins. How many batches can she make?

Division number model: \_\_\_\_\_ Multiplication number model: \_\_\_\_\_

Solution: \_\_\_\_\_

3  $\frac{2}{3} \div \frac{5}{6}$

Multiplication number model: \_\_\_\_\_ Answer: \_\_\_\_\_

4  $\frac{3}{7} \div 1\frac{1}{2}$

Multiplication number model: \_\_\_\_\_ Answer: \_\_\_\_\_



1 Multiply.

a.  $\frac{4}{5} * \frac{7}{8} =$  \_\_\_\_\_

b.  $\frac{11}{12} * \frac{5}{10} =$  \_\_\_\_\_

c. \_\_\_\_\_ =  $1\frac{3}{4} * 2\frac{1}{5}$

d. \_\_\_\_\_ =  $2\frac{1}{3} * 3\frac{1}{2}$

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2 The LCM of these two numbers is 15. What could the two numbers be? Fill in the circle next to the best answer.

- 15 and 1
- 3 and 5
- 15 and 3
- All of the above
- None of the above

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3 a. Plot the following points on the grid.

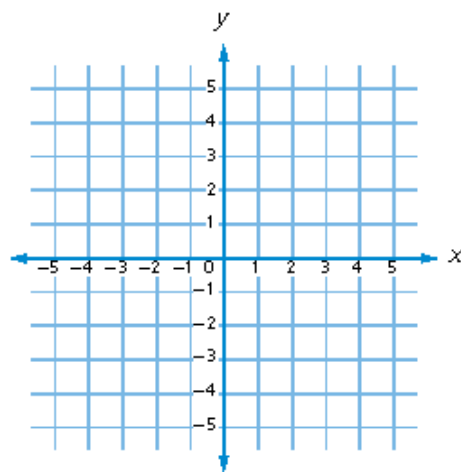
A: (3, 4)    B: (1, 0)    C: (4, -3)

D: (-3, -2)    E: (-1, 3)

b. Draw line segments connecting points A to B, B to C, C to D, D to E, and E to A.

c. What kind of polygon is this?

\_\_\_\_\_



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4 The auditorium fits 900 students. If each row seats 45 students, how many rows are there in the auditorium?

Number model: \_\_\_\_\_

Solution: \_\_\_\_\_

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5 Estimate the sums.

a.  $5.98 + 3.4 + 7.6$

Estimate: \_\_\_\_\_

b.  $0.02 + 0.98$

Estimate: \_\_\_\_\_

c.  $192.7 + 301.04$

Estimate: \_\_\_\_\_

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