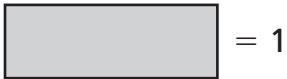# Adding and Subtracting Fractions with Like Denominators

Shade the bars to show the sums. Complete the number sentences. Change improper fractions to mixed numbers.
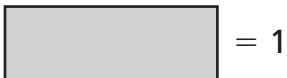
[gray bar] = 1

1

$\dfrac{4}{8}$ + $\dfrac{5}{8}$ = $\dfrac{\square}{8}$ = $\square$

2

$\dfrac{2}{6}$ + $\dfrac{4}{6}$ = $\dfrac{\square}{\square}$ = $\square$

Use the pictures to complete the number sentences.

[gray bar] = 1

3

$\dfrac{6}{7}$ − $\dfrac{3}{7}$ = $\dfrac{\square}{\square}$

4

$\dfrac{5}{5}$ − $\dfrac{3}{5}$ = $\dfrac{\square}{\square}$

Test Prep

5 The base of a parallelogram is two times its height. If the base is 12 centimeters, what is the area? Explain.

_____

_____

More Adding and Subtracting Fractions with Like Denominators

Write fractions to complete the number sentences.

1 $\dfrac{8}{15} + \dfrac{6}{15} = \dfrac{\square}{\square}$

2 $\dfrac{29}{22} - \dfrac{17}{22} = \dfrac{\square}{\square}$

3 $\dfrac{42}{55} + \dfrac{\square}{\square} = \dfrac{54}{55}$

4 $\dfrac{\square}{\square} + \dfrac{36}{39} = \dfrac{53}{39}$

5 $\dfrac{\square}{\square} - \dfrac{20}{28} = \dfrac{9}{28}$

6 $\dfrac{9}{45} + \dfrac{8}{45} + \dfrac{\square}{\square} = \dfrac{43}{45}$

Test Prep

7 Round the numbers 49.03 and 29.95 to the nearest tenth. What is the difference between the rounded numbers?
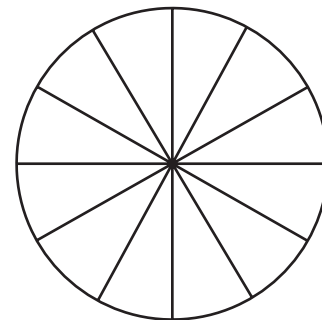
A. 19.1   **C.** 19

B. 20.9   **D.** 20

8 Which number is NOT equivalent to $4\dfrac{8}{9}$?

A. $\dfrac{44}{9}$ **C.** $4\dfrac{16}{18}$

B. $3\dfrac{16}{18}$ **D.** $\dfrac{88}{18}$

Stories About Adding and Subtracting Fractions

You may use the picture to help you solve both Problems 1 and 2.

Solve both problems and write number sentences to match the solutions.

1 Felicia spent $\frac{6}{12}$ of the daylight hours in school and $\frac{4}{12}$ of them on homework, soccer, and household chores. What fraction of the daylight hours might she use in any way she pleases?
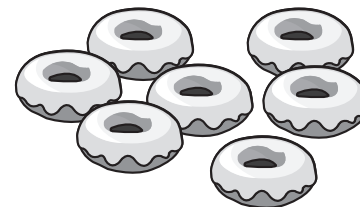
Number sentence(s):

2 Erik set out $\frac{7}{12}$ of a dozen donuts as snacks for his friends. What fraction of the dozen did he leave for later?

Number sentence(s):

Test Prep

3 Which is NOT the same as $\frac{2}{6} + \frac{2}{6}$?

  A. $\frac{4}{12}$ **C.** $\frac{4}{6}$

  B. $\frac{1}{3} + \frac{1}{3}$ **D.** $\frac{2}{3}$

4 Which number would NOT be a common denominator for 6 and 9?

  A. 12   **C.** 18

  B. 54   **D.** 36

Adding and Subtracting Unlike Things

Conversion Key

1 lb = 16 oz	1 hr = 60 min	1 L = 1,000 mL	1 m = 100 cm
1 yd = 3 ft	1 min = 60 sec	1 km = 1,000 m	1 cm = 10 mm

Complete the number sentences using the conversion key above.

1   8 yd + 15 ft = _____ yd

2   3 lb − 14 oz = _____ oz

3   _____ m + 12 cm = 412 cm

4   2 hr − _____ min = 40 min

5   144 in. − 2 yd = _____ in.

6   12 m + 4,000 cm = _____ cm

7   _____ hr + 120 min = 300 min

8   3,000 mL − 1 L = _____ L

Test Prep

9 Jewell has 40 feet of fencing to put around a garden. What are the dimensions of the garden with the largest possible area? Explain.

_____

_____

_____

Adding and Subtracting Fractions with Unlike Denominators

Add or subtract fractions of an hour and find the number of minutes.

1 $\frac{1}{2}$ of an hour = ☐ min, or $\frac{☐}{60}$ of an hour

$\frac{1}{3}$ of an hour = ☐ min, or $\frac{☐}{60}$ of an hour

$\frac{1}{2} - \frac{1}{3} = \frac{☐}{60} - \frac{☐}{60} = \frac{☐}{60}$ of an hour, or ☐ min

2 $\frac{3}{4}$ of an hour = ☐ min, or $\frac{☐}{60}$ of an hour

$\frac{2}{3}$ of an hour = ☐ min, or $\frac{☐}{60}$ of an hour

$\frac{3}{4} + \frac{2}{3} = \frac{☐}{60} + \frac{☐}{60} = \frac{☐}{60}$ of an hour, or ☐ min

Test Prep

3 Josie has a rectangular piece of paper that is 8 inches by 10 inches. She cuts the rectangle into two congruent triangles. What is the area of each triangle? Explain.

_____

_____

_____

Stories with Fractions

1 $\dfrac{3}{5} + \dfrac{1}{5} = \boxed{}$

2 $\dfrac{7}{9} - \dfrac{4}{9} = \boxed{}$

3 $\dfrac{4}{3} + \dfrac{4}{3} = \boxed{}$

4 $\dfrac{6}{5} - \dfrac{3}{5} = \boxed{}$

5 $\dfrac{1}{2} + \dfrac{1}{4} = \boxed{}$

6 $\dfrac{1}{4} - \dfrac{1}{8} = \boxed{}$

7 $\dfrac{2}{3} + \boxed{} = 1$

8 $\boxed{} + \dfrac{5}{7} = 10$

9 $1\dfrac{1}{3} + 7\dfrac{1}{6} = \boxed{}$

10 $5\dfrac{3}{4} - 4\dfrac{1}{3} = \boxed{}$

11 $11\dfrac{4}{5} - 8\dfrac{1}{2} = \boxed{}$

12 $6\dfrac{1}{4} + 4\dfrac{5}{6} = \boxed{}$

Test Prep

13 The sum of $\dfrac{3}{5} + \dfrac{2}{3}$ is . . .

    A. less than $\dfrac{1}{2}$ **C.** more than 1

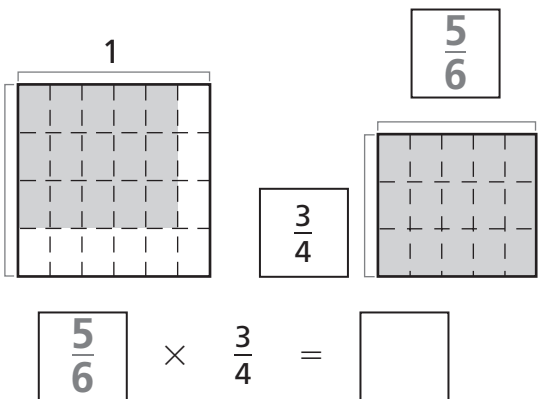   **B.** $\dfrac{5}{8}$ **D.** $\dfrac{6}{15}$

14 Which of the following is NOT equal to $\dfrac{1}{2}$?

    A. $\dfrac{1}{3} + \dfrac{1}{6}$ **C.** $\dfrac{2}{7} + \dfrac{3}{14}$

    B. $\dfrac{7}{10} - \dfrac{1}{5}$ **D.** $\dfrac{3}{4} - \dfrac{1}{8}$
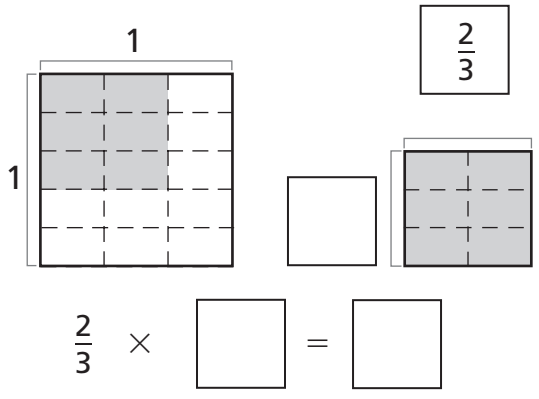
Using Area to Multiply Fractions

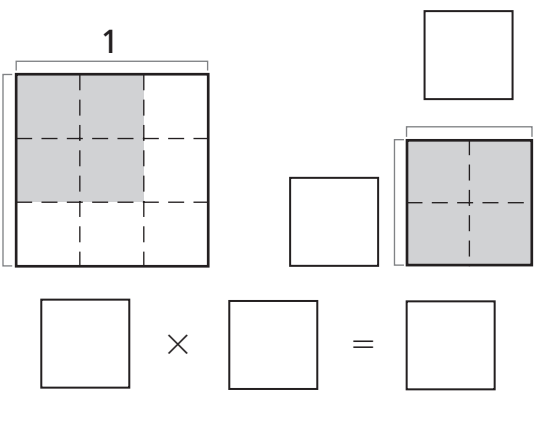**Fill in the blanks and find the shaded area to multiply the fractions.**
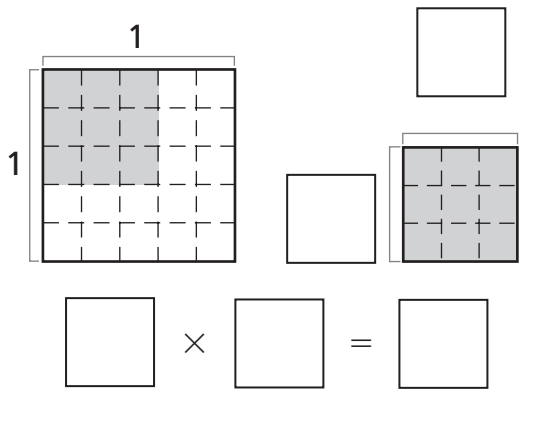
1

1

1

$\dfrac{5}{6}$

$\dfrac{3}{4}$

$$\dfrac{5}{6} \times \dfrac{3}{4} = \boxed{}$$

2

1

1

$\dfrac{2}{3}$

$$\dfrac{2}{3} \times \boxed{} = \boxed{}$$

3

1

1

$$\boxed{} \times \boxed{} = \boxed{}$$

4

1

1

$$\boxed{} \times \boxed{} = \boxed{}$$

Add.

5 $\dfrac{2}{3} + \dfrac{2}{3} = \boxed{\dfrac{4}{3}}$

6 $\dfrac{5}{6} + \dfrac{3}{4} = \boxed{} + \boxed{} = \boxed{}$

7 $\dfrac{3}{5} + \dfrac{3}{5} = \boxed{}$

8 $\dfrac{2}{3} + \dfrac{3}{5} = \boxed{} + \boxed{} = \boxed{}$
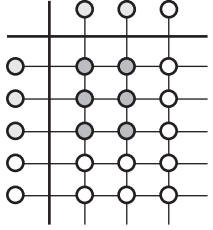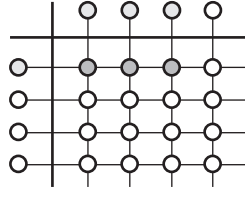
Test Prep

9 Trey says that all parallelograms are rectangles. Do you agree? Explain.
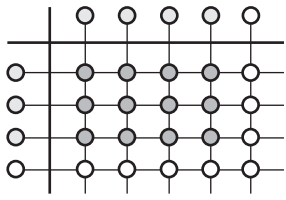
_____

_____

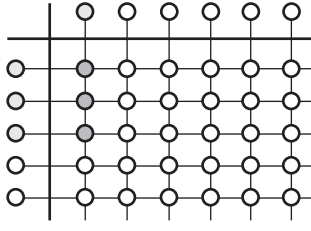# Using Other Models to Multiply Fractions

Use the dot sketches to complete the sentences.

1

$\dfrac{2}{3} \times \dfrac{3}{5} = \boxed{}$

2

$\dfrac{3}{4} \times \dfrac{1}{4} = \boxed{}$

3

$\dfrac{4}{5} \times \dfrac{3}{4} = \boxed{}$

4

$\dfrac{1}{6} \times \dfrac{3}{5} = \boxed{}$

5 $\dfrac{2}{3} + \dfrac{3}{5} = \boxed{} + \boxed{} = \boxed{}$

6 $\dfrac{4}{5} + \dfrac{3}{4} = \boxed{} + \boxed{} = \boxed{}$

7 $\dfrac{3}{4} + \dfrac{1}{4} = \boxed{}$

8 $\dfrac{1}{6} + \dfrac{3}{5} = \boxed{} + \boxed{} = \boxed{}$

Test Prep

9

1 m

1 m
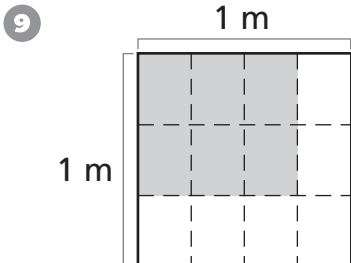
1 square meter has been divided into 12 equal parts as shown. Which of the following is NOT equal to the area of the shaded rectangle?

A. $\dfrac{1}{2}$ sq m

C. $\dfrac{17}{12}$ sq m

B. $\dfrac{3}{4}$ m $\times \dfrac{2}{3}$ sq m

D. $\dfrac{6}{12}$ sq m

Fractions of Quantities

1 The input is **10 cents.** Write the outputs (the number of cents) in the white boxes.

10 Cents

$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	$\frac{2}{10}$	$\frac{2}{5}$	$\frac{2}{2}$	$\frac{3}{10}$	$\frac{3}{5}$	$\frac{3}{2}$	$\frac{4}{10}$	$\frac{4}{5}$

$\frac{4}{2}$	$\frac{5}{10}$	$\frac{5}{5}$	$\frac{10}{20}$	$\frac{6}{10}$	$\frac{15}{10}$	$\frac{1}{1}$	$\frac{7}{10}$	$\frac{2}{2}$	$\frac{5}{5}$	$\frac{12}{20}$	$\frac{10}{10}$	$\frac{6}{15}$	$\frac{9}{15}$

Complete each sentence.

2 $\frac{2}{5}$ of 10 = ☐

3 $\frac{12}{20}$ of 10 = ☐

4 ☐ of 10 = 6

5 ☐ of 10 = 7

Test Prep

6 Sage divided 48,288 by 48 and got a quotient of 106. She was worried that she might have made a mistake. All of these are reasonable ways to check her answer EXCEPT:

A. Use a calculator to multiply 48 × 106.

B. Round 48 to 50 and 106 to 100, multiply 50 × 100, and compare the product to 48,288.

C. Multiply 48 × 100 and compare it to the dividend 48,288.

D. Use a calculator to multiply 48 × 48,288.

Stories About Multiplying Fractions

1 Judy wanted to plant a flower garden in the corner of her front yard. She told her parents that she would need a section that was one-sixth by one-fourth of the front yard.

Show how you got your answer.

What fraction of the front yard did she need for her flower garden? ☐

Complete the number sentences.

Use another sheet of paper to make sketches if you wish.

2 $\dfrac{1}{3} \times \dfrac{3}{8} =$ ☐ $=$ ☐

3 $\dfrac{4}{5} \times \dfrac{2}{9} =$ ☐

4 $\dfrac{3}{8} \times \dfrac{8}{3} =$ ☐ $=$ ☐

5 $\dfrac{5}{6} \times \dfrac{3}{4} =$ ☐ $=$ ☐

6 $\dfrac{5}{8} \times \dfrac{2}{12} =$ ☐ $=$ ☐

7 $\dfrac{9}{11} \times \dfrac{4}{5} =$ ☐

8 $\dfrac{9}{8} \times \dfrac{11}{13} =$ ☐

9 $\dfrac{2}{3} \times \dfrac{1}{2} =$ ☐

Test Prep

10 Mackenzie wants to lay floor tile in a kitchen that measures 12 ft by 14 ft and a hallway that measures 4 ft by 12 ft. What is the total area to be covered? Explain.

_____

_____

_____

_____