

## Add and Subtract Fractions

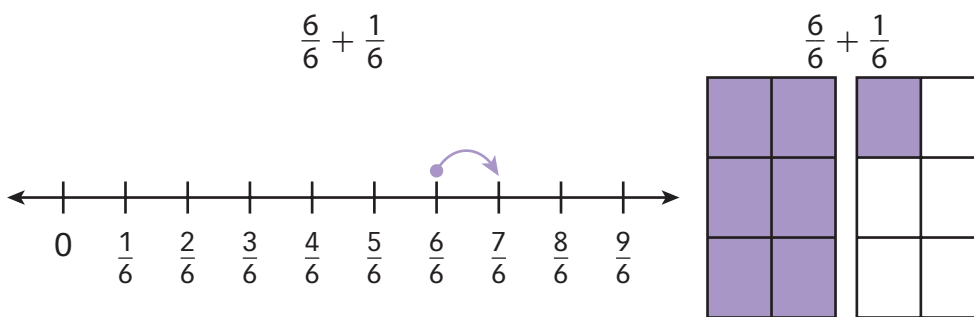
Name: \_\_\_\_\_

**Prerequisite: Model Fraction Addition and Subtraction**

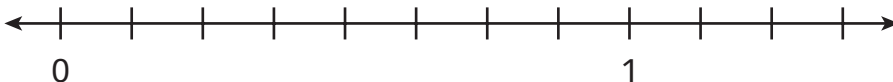
**Study the example problem showing fraction addition with number line and area models. Then solve problems 1–8.**

**Example**

Adding fractions means joining or putting together parts of a whole. On the number line, each whole is divided into 6 equal sections. Each rectangle is divided into 6 equal pieces.

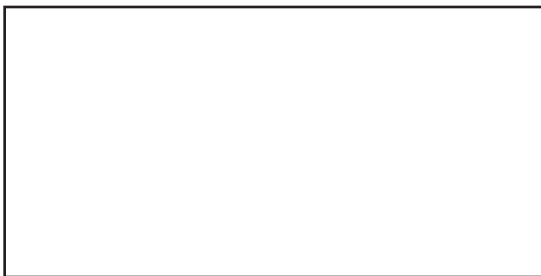


- 1** Label the number line to show eighths.



- 2** Use the number line in problem 1 to show  $\frac{3}{8} + \frac{2}{8}$ .

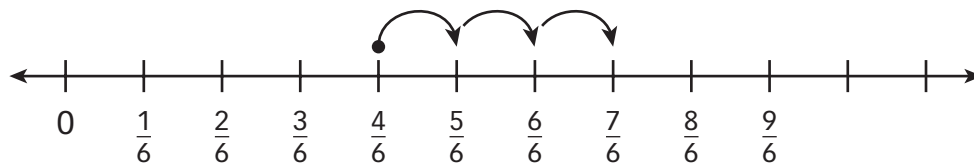
- 3** Divide the rectangle to show eighths.



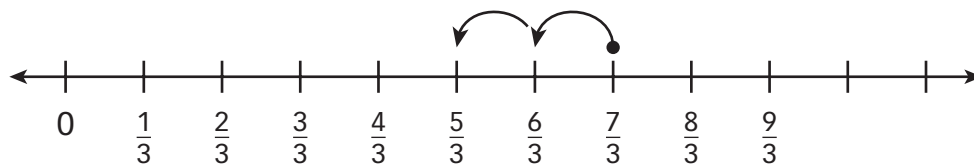
- 4** Use the rectangle in problem 3 to show  $\frac{3}{8} + \frac{2}{8}$ .

**Solve.**

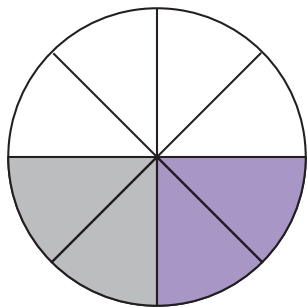
- 5** What is the fraction addition problem shown on this number line? \_\_\_\_\_



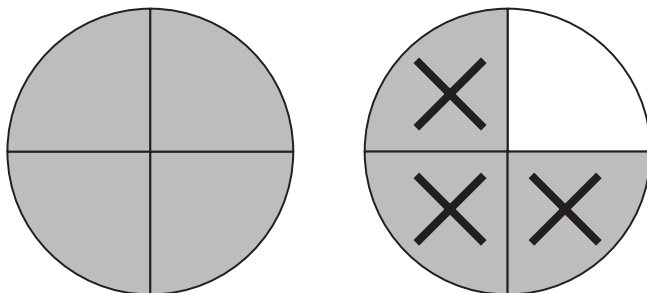
- 6** What is the fraction subtraction problem shown on this number line? \_\_\_\_\_



- 7** What is the fraction addition problem shown by this area model? \_\_\_\_\_



- 8** What is the fraction subtraction problem shown by this area model? \_\_\_\_\_



## Add Fractions

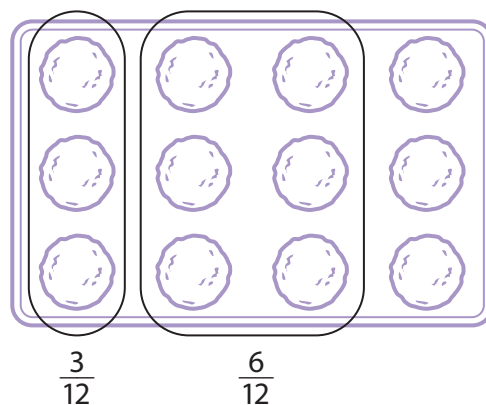
Study the example problem showing one way to add fractions. Then solve problems 1–13.

**Example**

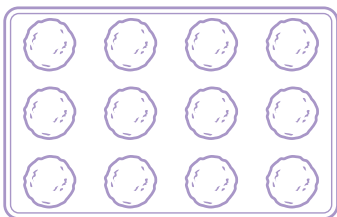
Shrina has a muffin tray that holds 12 muffins. She fills  $\frac{3}{12}$  of the tray with apple muffin batter. Then she fills  $\frac{6}{12}$  with pumpkin muffin batter. What fraction of the tray is filled?

$$\frac{3}{12} + \frac{6}{12} = \frac{9}{12}$$

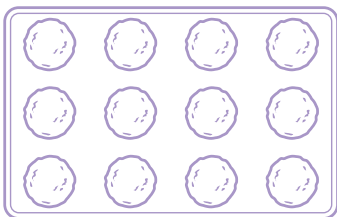
So,  $\frac{9}{12}$  of the muffin tray is filled.



- 1 Shade  $\frac{2}{12}$  of the muffin tray.



- 2 Sam fills  $\frac{2}{12}$  of the tray with banana muffin batter. Then she fills  $\frac{6}{12}$  with lemon muffin batter. Shade the diagram to show this.



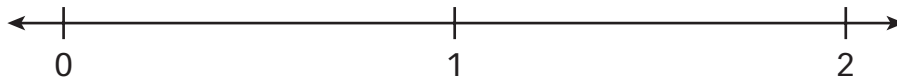
- 3 In problem 2, what fraction of the tray is filled? \_\_\_\_\_

Write an equation for this problem that includes your answer. \_\_\_\_\_

**Solve.**

Kay ran  $\frac{6}{8}$  mile and rested. Then she ran another  $\frac{6}{8}$  mile.

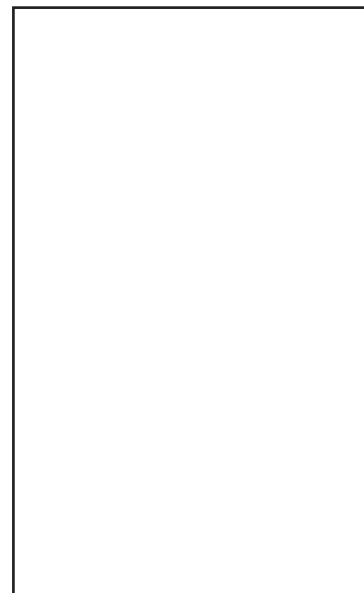
- 4 Divide the number line below to show eighths.



- 5 Label  $\frac{6}{8}$  on the number line above.
- 6 Use arrows to show  $\frac{6}{8} + \frac{6}{8}$  on the number line.
- 7 What is the total distance Kay ran? \_\_\_\_\_
- 8 Write an equation for this problem that includes your answer. \_\_\_\_\_

Jin cleaned  $\frac{1}{10}$  of the patio before lunch and cleaned  $\frac{9}{10}$  of the patio after lunch.

- 9 Divide the rectangle to show tenths.
- 10 Shade the rectangle to show the fraction Jin cleaned before lunch.
- 11 Use a different color to shade the rectangle to show the fraction Jin cleaned after lunch.
- 12 What fraction of the patio did Jin clean altogether?  
\_\_\_\_\_
- 13 Write an equation for this problem that includes your answer. \_\_\_\_\_

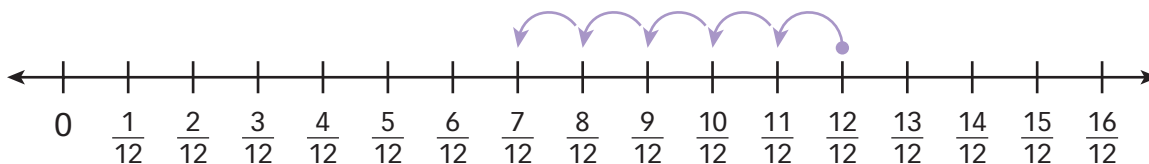


## Subtract Fractions

**Study the example showing one way to subtract fractions. Then solve problems 1–7.**

### Example

Ali bought a carton of eggs. He used  $\frac{3}{12}$  of the eggs to cook breakfast. He used another  $\frac{2}{12}$  to make a dessert for dinner. What fraction of the carton is left?



$$\frac{12}{12} - \frac{3}{12} = \frac{9}{12}$$

$$\frac{9}{12} - \frac{2}{12} = \frac{7}{12}$$

So,  $\frac{7}{12}$  of the carton is left.

Keisha is going to her friend's house  $\frac{8}{10}$  mile from home. Her mother drives her partway, then she walks the last  $\frac{3}{10}$  mile.

- 1 Divide the number line below to show tenths. Then label each tick mark.



- 2 Use arrows to show the problem on the number line you drew in problem 1.
- 3 How far did Keisha's mother drive her? \_\_\_\_\_
- 4 Write an equation for this problem that includes your answer. \_\_\_\_\_

**Solve.**

- 5** Anna made a quilt by sewing together green, white, and yellow fabric. When she was done,  $\frac{2}{6}$  of the quilt was green and  $\frac{3}{6}$  was yellow. The rest was white. What fraction of the quilt was white?

**Show your work.**

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

- 6** What is  $\frac{9}{8} - \frac{8}{8}$ ?

**Use a number line or an area model to show your thinking.**

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

- 7** Shanice had 1 whole pizza. After eating some of it, she had  $\frac{4}{6}$  of the pizza left. What fraction of the pizza did she eat?

**Show your work.**

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

## Add and Subtract Fractions

**Solve the problems.**

- 1** Lin bought  $\frac{3}{4}$  pound of cheddar cheese and some Swiss cheese. Altogether she bought  $\frac{7}{4}$  pounds of cheese. How much Swiss cheese did Lin buy?

**A**  $\frac{4}{8}$  of a pound      **C**  $\frac{10}{8}$  pounds  
**B**  $\frac{4}{4}$  of a pound      **D**  $\frac{10}{4}$  pounds

Does it make sense to add or subtract here?



- 2** Carrie has 2 meters of ribbon. She cuts off pieces of ribbon that are  $\frac{5}{10}$  meter,  $\frac{1}{10}$  meter, and  $\frac{7}{10}$  meter. How long is the remaining piece of ribbon?

**A**  $\frac{1}{10}$  meter      **C**  $\frac{7}{10}$  meter  
**B**  $\frac{3}{10}$  meter      **D**  $\frac{13}{10}$  meters

This problem seems to have more than one step.



Lee chose **D** as the correct answer. How did she get that answer?

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- 3** Ms. Atkins had a basket of tomatoes. She used  $\frac{5}{12}$  of the tomatoes to make soup. She used  $\frac{2}{12}$  in a salad. What fraction of the tomatoes are left?

**Show your work.**

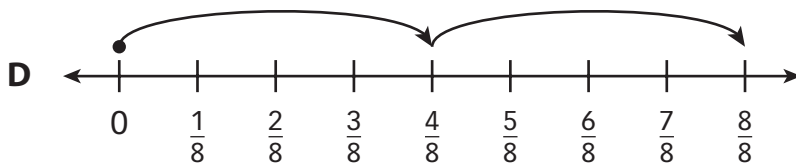
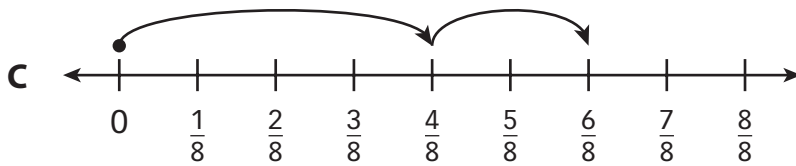
What fraction can you use to represent all of the tomatoes?



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

**Solve.**

- 4** Jo and Kira are raking leaves in the yard. They divide the yard into 8 equal sections. Jo rakes 4 sections. Kira rakes 2 sections. Which model can be used to find the total fraction of the yard they rake? Circle the letter of all that apply.



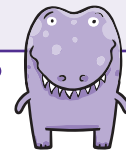
Two different models could show the same problem.



- 5** A pizza is cut into 6 equal pieces. After Eli and Dan eat some,  $\frac{1}{6}$  of the pizza is left. What fraction could each boy eat? Give one possible answer.

**Show your work.**

To find the fraction that was eaten, should you add or subtract?



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

- 6** Milo has 2 hours of free time. He spends  $\frac{2}{4}$  of an hour with his dog. He spends  $\frac{3}{4}$  of an hour drawing. What fraction of an hour does he have left?

**Show your work.**

How can you write 2 wholes as a fraction?



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