

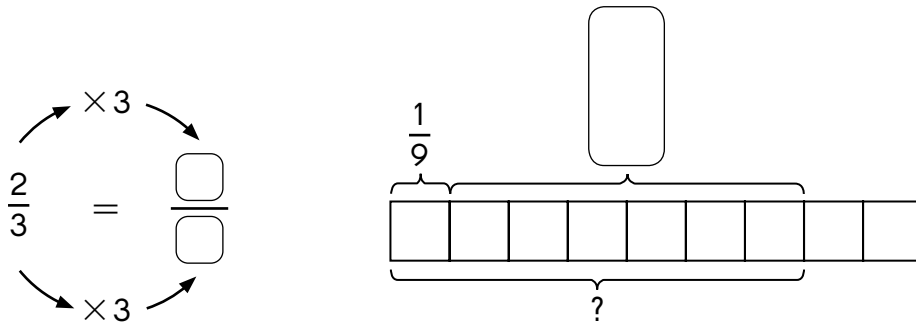
**CHAPTER**  
**6**

# Fractions and Mixed Numbers

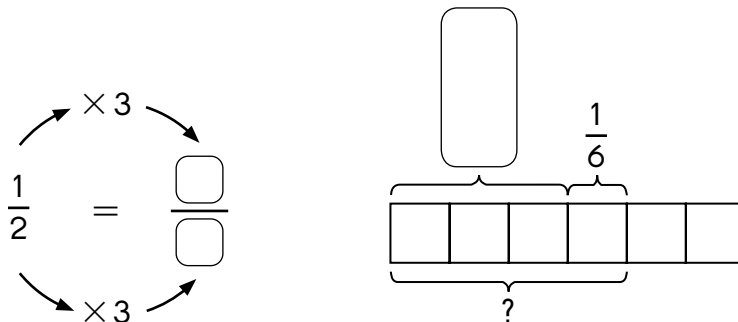
## Lesson 6.1 Adding Fractions

Find the equivalent fraction. Complete the model and add the fractions.

1.  $\frac{1}{9} + \frac{2}{3} = \frac{\square}{\square} + \frac{\square}{\square} = \square$



2.  $\frac{1}{2} + \frac{1}{6} = \frac{\square}{\square} + \frac{\square}{\square} = \square = \square$



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**Add. Write each answer in simplest form.**

3.  $\frac{2}{5} + \frac{1}{10} = \frac{\square}{\square} + \frac{\square}{\square} = \square = \square$

4.  $\frac{2}{3} + \frac{2}{12} = \frac{\square}{\square} + \frac{\square}{\square} = \square = \square$

5. Add  $\frac{1}{4}$  and  $\frac{1}{12}$ .

6. Add  $\frac{1}{4}$  to your answer in Exercise 5.

7. Add  $\frac{1}{3}$  and  $\frac{1}{6}$ .

8. Add  $\frac{1}{6}$  to your answer in Exercise 7.

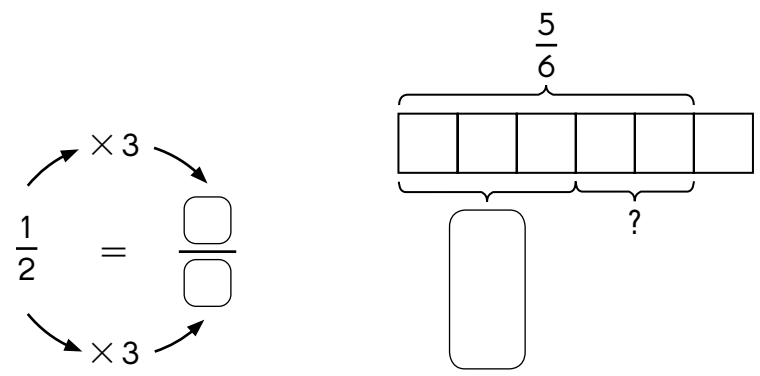
9. What is the sum of  $\frac{1}{8}$ ,  $\frac{1}{4}$ , and  $\frac{2}{4}$ ?

10. What is the sum of  $\frac{1}{6}$ ,  $\frac{3}{18}$ , and  $\frac{4}{9}$ ?

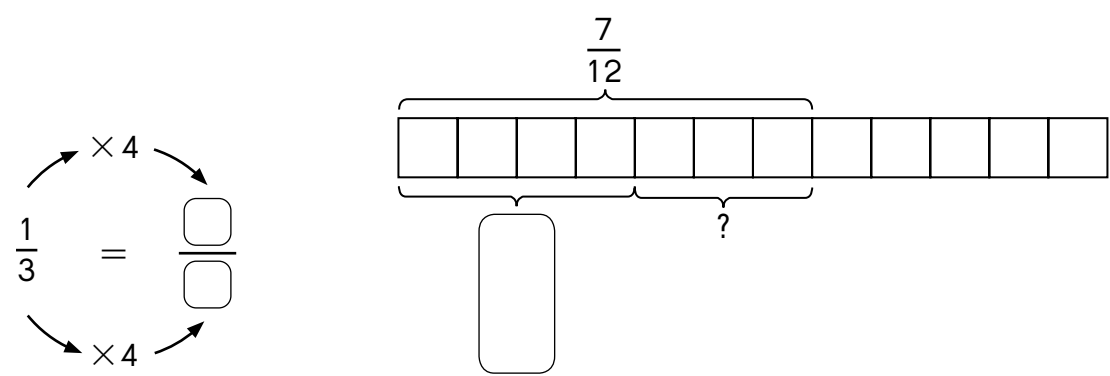
## Lesson 6.2 Subtracting Fractions

Find the equivalent fraction. Complete the model. Then subtract.

1.  $\frac{5}{6} - \frac{1}{2} = \frac{\square}{\square} - \frac{\square}{\square} = \square = \square$



2.  $\frac{7}{12} - \frac{1}{3} = \frac{\square}{\square} - \frac{\square}{\square} = \square = \square$



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**Subtract. Write each answer in simplest form.**

3.  $\frac{3}{4} - \frac{5}{12} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} - \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$

4.  $\frac{4}{5} - \frac{3}{10} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} - \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$

5.  $1 - \frac{7}{12} - \frac{1}{4} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$

6.  $1 - \frac{6}{16} - \frac{4}{8} = \boxed{\phantom{00}} = \boxed{\phantom{00}}$

7. Subtract  $\frac{1}{3}$  from  $\frac{5}{6}$ .

8. Subtract  $\frac{5}{6}$  from  $\frac{11}{12}$ .

9. The difference between  $\frac{7}{10}$  and  $\frac{3}{5}$  is  $\boxed{\phantom{00}}$ .

10. The difference between 1 and  $\frac{7}{8}$  is  $\boxed{\phantom{00}}$ .

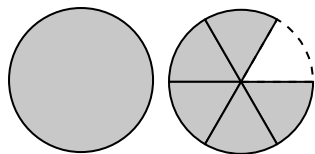
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## Lesson 6.3 Mixed Numbers

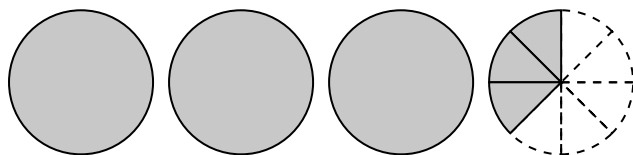
Write a mixed number for each model.

1.



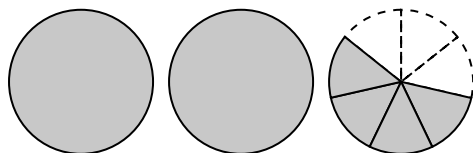
$$1 + \frac{5}{6} = \boxed{\phantom{00}}$$

2.



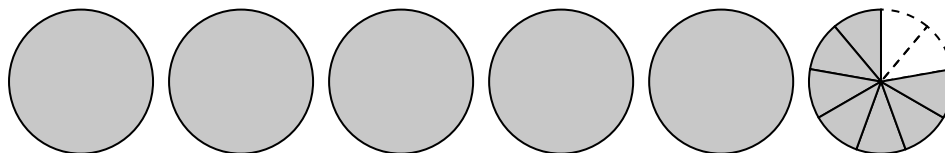
$$3 + \frac{3}{8} = \boxed{\phantom{00}}$$

3.



$$2 + \frac{4}{7} = \boxed{\phantom{00}}$$

4.



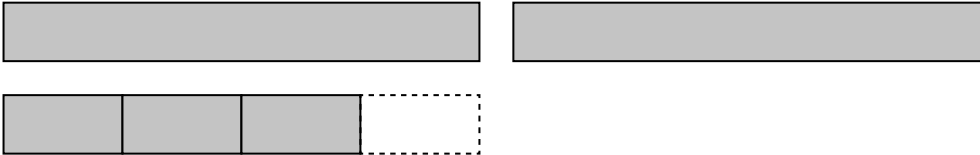
$$5 + \frac{7}{9} = \boxed{\phantom{00}}$$

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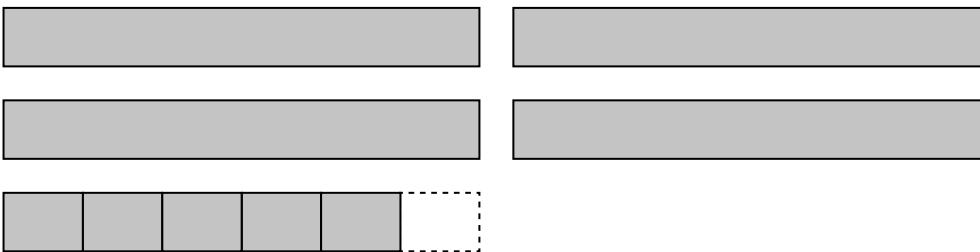
**Write a mixed number for each model.**

**5.**



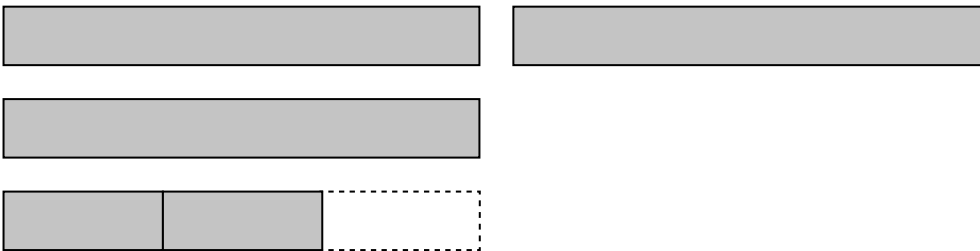
wholes and  fourths is .

**6.**



wholes and  sixths is .

**7.**

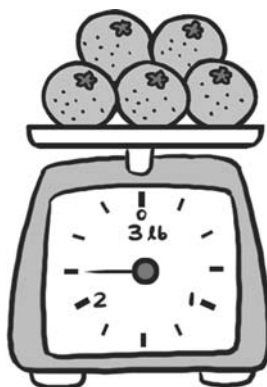
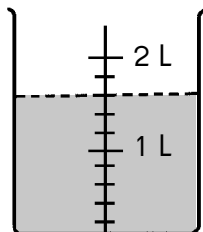


wholes and  thirds is .

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**Write a mixed number for each of the following.**



8. The volume of water in the container is \_\_\_\_\_ liters.

9. The weight of five oranges is \_\_\_\_\_ pounds.

**Write each answer as a mixed number.**

10.  $2 + \frac{3}{5} =$

11.  $\frac{5}{8} + 4 =$

12.  $3 + \frac{4}{9} =$

13.  $5 + \frac{7}{12} =$

14.  $\frac{1}{6} + 2 =$

15.  $\frac{3}{10} + 4 =$

**Simplify.**

16.  $2\frac{6}{8} =$

17.  $1\frac{4}{10} =$

18.  $4\frac{3}{9} =$

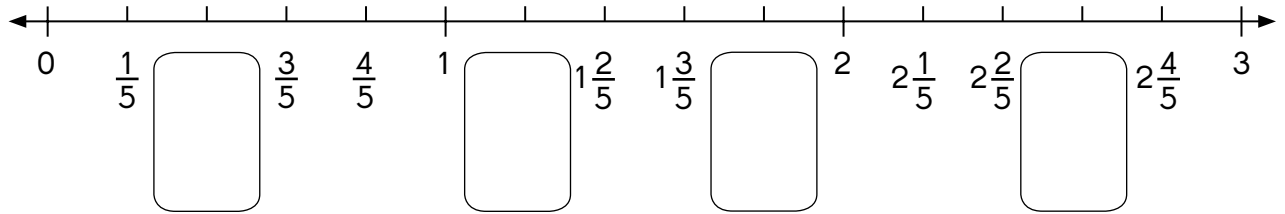
19.  $3\frac{9}{12} =$

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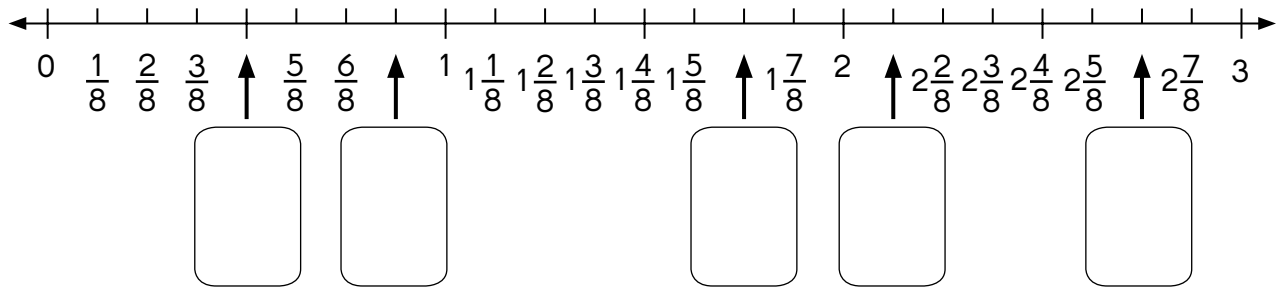
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**Write the correct fraction or mixed number in each box.  
Express each answer in simplest form.**

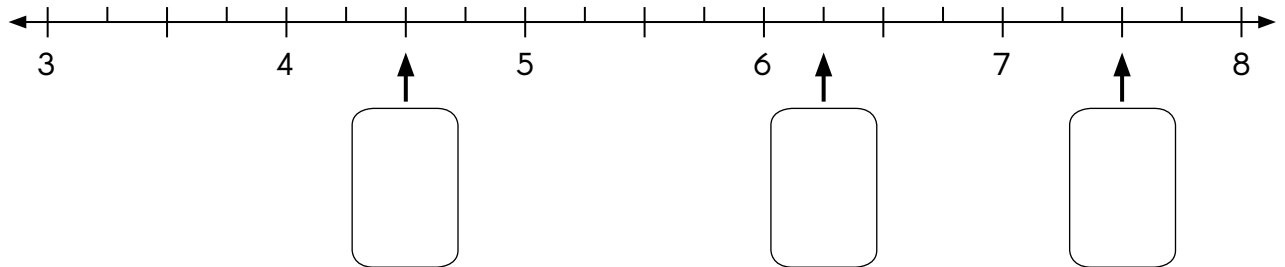
**20.**



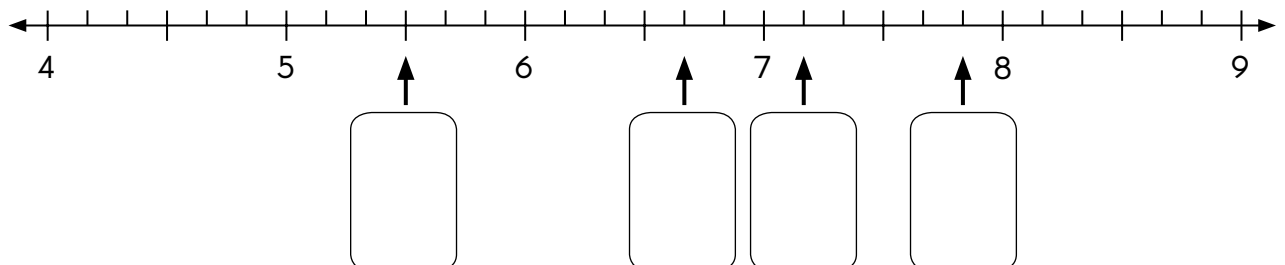
**21.**



**22.**



**23.**

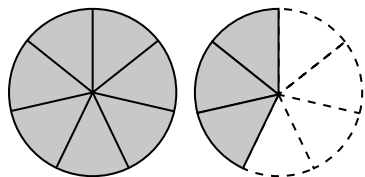




## Lesson 6.4 Improper Fractions

Write each mixed number as an improper fraction.

1.



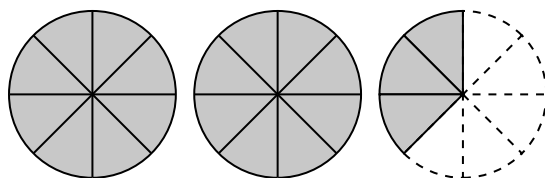
a.  $1 =$  \_\_\_\_\_ sevenths

b.  $\frac{3}{7} =$  \_\_\_\_\_ sevenths

c.  $1\frac{3}{7} =$  \_\_\_\_\_ sevenths

d.  $=$

2.



a.  $2 =$  \_\_\_\_\_ eighths

b.  $\frac{3}{8} =$  \_\_\_\_\_ eighths

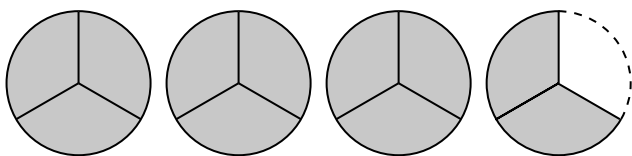
c.  $2\frac{3}{8} =$  \_\_\_\_\_ eighths

d.  $=$

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

Date: \_\_\_\_\_

3.



a.  $3 =$  \_\_\_\_\_ thirds

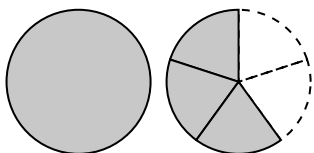
b.  $\frac{2}{3} =$  \_\_\_\_\_ thirds

c.  $3\frac{2}{3} =$  \_\_\_\_\_ thirds

d.  $=$

**Write the improper fractions for the shaded parts.**

4.



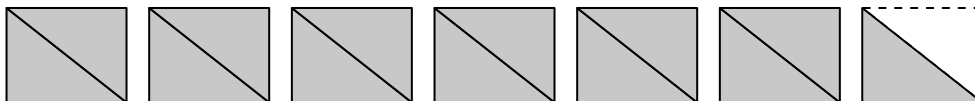
$1\frac{3}{5} =$

5.



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

6.



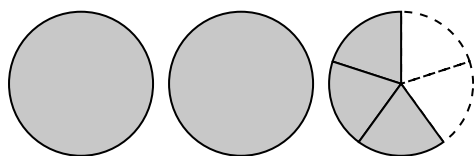
$6\frac{1}{2} =$

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**Write a mixed number and an improper fraction for each model.**

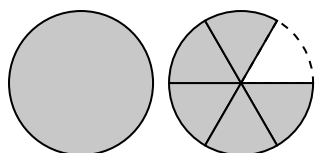
**7.**



Mixed number:

Improper fraction:

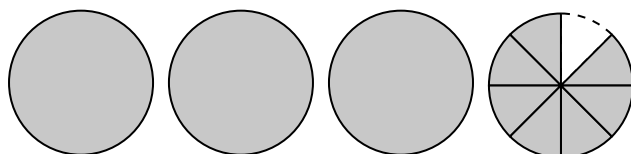
**8.**



Mixed number:

Improper fraction:

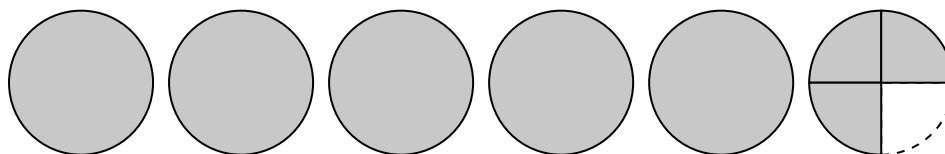
**9.**



Mixed number:

Improper fraction:

**10.**



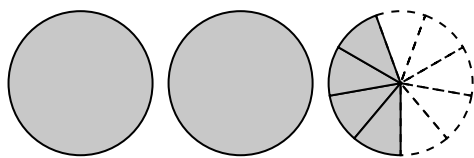
Mixed number:

Improper fraction:

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

Date: \_\_\_\_\_

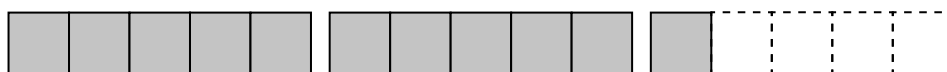
11.



Mixed number:

Improper fraction:

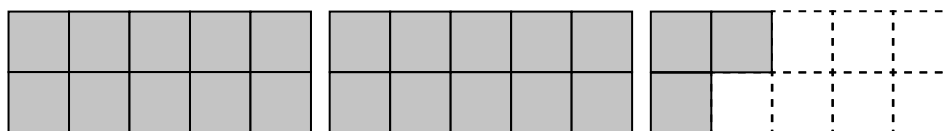
12.



Mixed number:

Improper fraction:

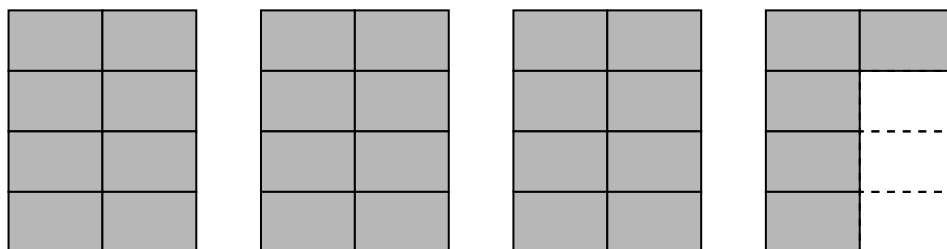
13.



Mixed number:

Improper fraction:

14.



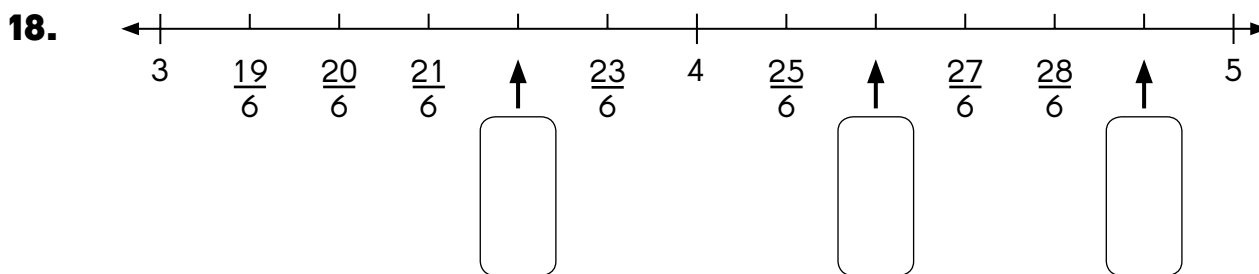
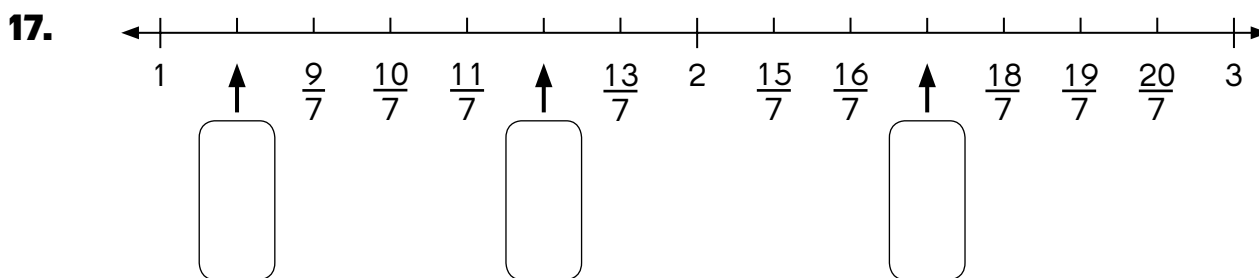
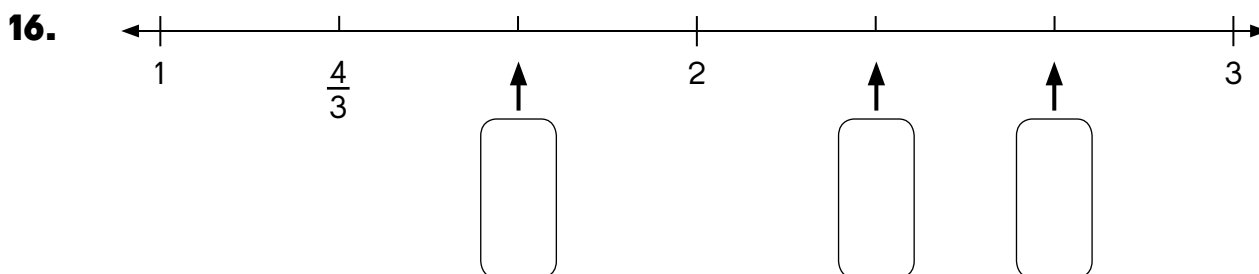
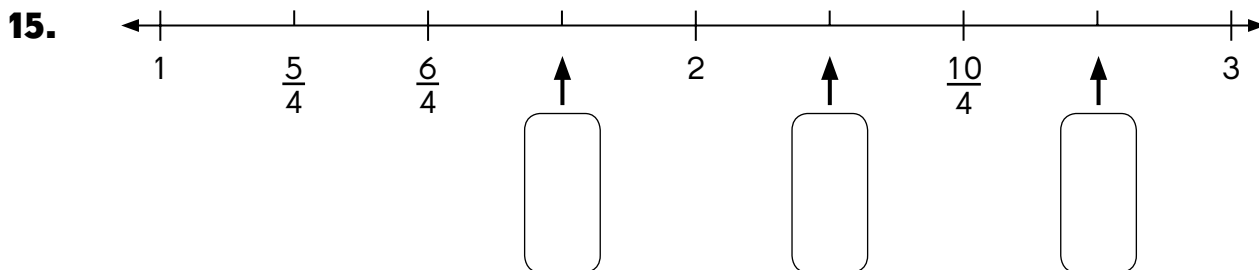
Mixed number:

Improper fraction:

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

Date: \_\_\_\_\_

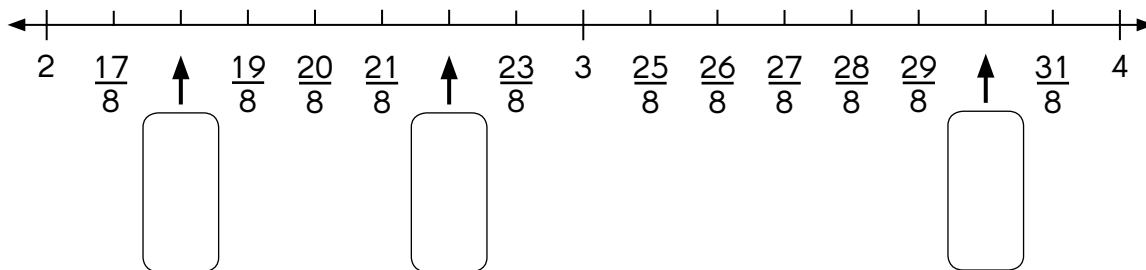
**Write the missing improper fraction in each box.  
Express each answer in simplest form.**



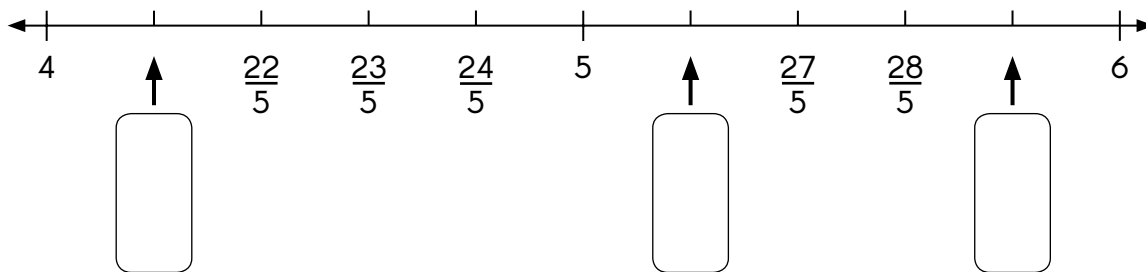
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Date: \_\_\_\_\_

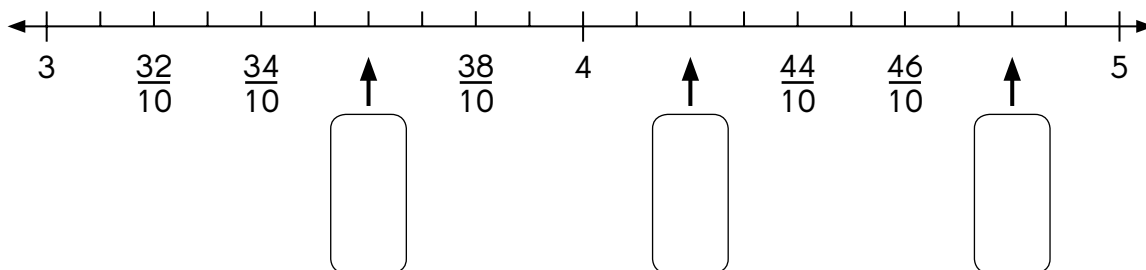
19.



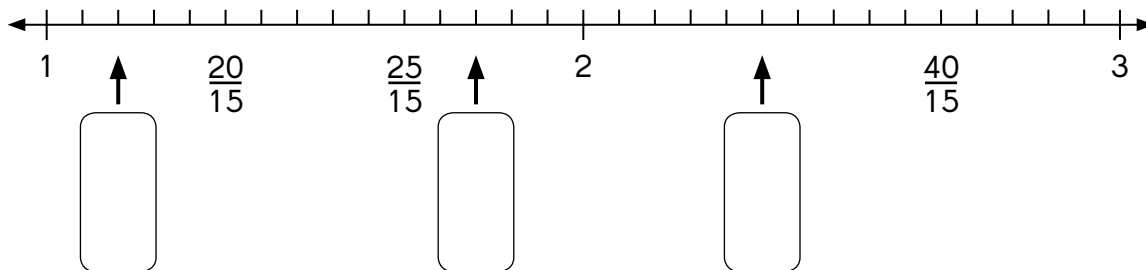
20.



21.



22.



## Lesson 6.5 Renaming Improper Fractions and Mixed Numbers

Express each improper fraction as a mixed number.

$$1. \quad \frac{11}{2} = \frac{10}{2} + \frac{1}{2}$$

$$= 5 + \frac{\boxed{\phantom{00}}}{2}$$

$$= 5 \frac{\boxed{\phantom{00}}}{2}$$

$$2. \quad \frac{20}{3} = \frac{18}{3} + \frac{2}{3}$$

$$= 6 + \frac{\boxed{\phantom{00}}}{3}$$

$$= 6 \frac{\boxed{\phantom{00}}}{3}$$

$$3. \quad \frac{13}{4} = \frac{\boxed{\phantom{00}}}{4} + \frac{\boxed{\phantom{00}}}{4}$$

$$= 3 + \frac{\boxed{\phantom{00}}}{4}$$

$$= 3 \frac{\boxed{\phantom{00}}}{4}$$

$$4. \quad \frac{23}{5} = \frac{\boxed{\phantom{00}}}{5} + \frac{\boxed{\phantom{00}}}{5}$$

$$= 4 + \frac{\boxed{\phantom{00}}}{5}$$

$$= 4 \frac{\boxed{\phantom{00}}}{5}$$

$$5. \quad \frac{27}{10} = \frac{\boxed{\phantom{00}}}{10} + \frac{\boxed{\phantom{00}}}{10}$$

$$= \boxed{\phantom{00}} + \frac{\boxed{\phantom{00}}}{10}$$

$$= \boxed{\phantom{00}}$$

$$6. \quad \frac{26}{7} = \frac{\boxed{\phantom{00}}}{7} + \frac{\boxed{\phantom{00}}}{7}$$

$$= \boxed{\phantom{00}} + \frac{\boxed{\phantom{00}}}{7}$$

$$= \boxed{\phantom{00}}$$

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**Express each improper fraction as a mixed number in simplest form.**

7.  $\frac{16}{6} = 2 + \frac{\boxed{\phantom{00}}}{6}$   
=

8.  $\frac{20}{8} = 2 + \frac{\boxed{\phantom{00}}}{8}$   
=

9.  $\frac{15}{2} =$

10.  $\frac{18}{10} =$

11.  $\frac{21}{9} =$

12.  $\frac{15}{12} =$

13.  $\frac{22}{7} =$

14.  $\frac{36}{6} =$

15.  $\frac{30}{4} =$

16.  $\frac{42}{5} =$

17.  $\frac{28}{13} =$

18.  $\frac{48}{15} =$



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**Express each mixed number as an improper fraction.**

**19.**  $3\frac{2}{3} = 3 + \frac{2}{3}$

$$= \frac{\square}{3} + \frac{2}{3}$$

$$= \frac{\square}{3}$$

**20.**  $1\frac{1}{4} = 1 + \frac{1}{4}$

$$= \frac{\square}{4} + \frac{1}{4}$$

$$= \frac{\square}{4}$$

**21.**  $2\frac{3}{5} = \frac{\square}{5} + \frac{3}{5}$

$$= \frac{\square}{5}$$

**22.**  $2\frac{5}{6} = \frac{\square}{6} + \frac{5}{6}$

$$= \frac{\square}{6}$$

**23.**  $2\frac{4}{7} = \frac{\square}{7} + \frac{\square}{7}$

$$= \frac{\square}{9}$$

**24.**  $2\frac{2}{9} = \frac{\square}{9} + \frac{\square}{9}$

$$= \frac{\square}{9}$$

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**Express each mixed number as an improper fraction.**

**25.**  $4\frac{1}{3} =$

**26.**  $2\frac{3}{10} =$

**27.**  $1\frac{2}{7} =$

**28.**  $1\frac{5}{9} =$

**29.**  $2\frac{1}{4} =$

**30.**  $2\frac{5}{12} =$

**31.**  $1\frac{3}{10} =$

**32.**  $1\frac{2}{11} =$

**33.**  $5\frac{4}{5} =$

**34.**  $3\frac{8}{9} =$

**35.**  $6\frac{1}{5} =$

**36.**  $7\frac{2}{7} =$

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## Lesson 6.6 Renaming Whole Numbers when Adding and Subtracting Fractions

**Add. Express each answer as a mixed number in simplest form.**

1.  $\frac{5}{9} + \frac{2}{3} =$

2.  $\frac{3}{4} + \frac{11}{12} =$

3.  $\frac{1}{2} + \frac{7}{8} =$

4.  $\frac{1}{6} + \frac{2}{3} =$

5.  $\frac{7}{10} + \frac{4}{5} =$

6.  $\frac{5}{12} + \frac{2}{3} =$

7.  $\frac{5}{6} + \frac{7}{12} =$

8.  $\frac{6}{8} + \frac{3}{4} =$

9.  $\frac{5}{12} + \frac{1}{2} + \frac{2}{3} =$

10.  $\frac{1}{2} + \frac{3}{8} + \frac{3}{4} =$

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**Subtract. Express each answer as a mixed number in simplest form.**

**11.**  $3 - \frac{7}{12} =$

**12.**  $4 - \frac{8}{9} =$

**13.**  $2 - \frac{4}{5} =$

**14.**  $5 - \frac{2}{3} =$

**15.**  $3 - \frac{1}{6} - \frac{1}{3} =$

**16.**  $4 - \frac{1}{4} - \frac{1}{2} =$

**17.**  $6 - \frac{2}{5} - \frac{3}{10} =$

**18.**  $3 - \frac{2}{7} - \frac{5}{14} =$

**19.**  $2 - \frac{5}{12} - \frac{1}{6} =$

**20.**  $5 - \frac{2}{3} - \frac{2}{9} =$

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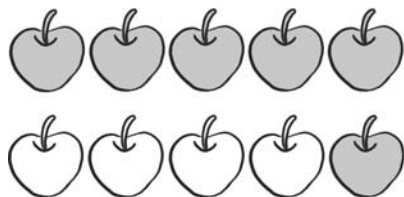
## Lesson 6.7 Fraction of a Set

What fraction of each set of objects is shaded? Express your answer in simplest form.

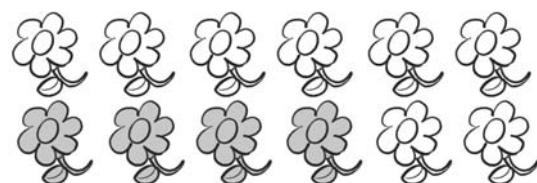
1.



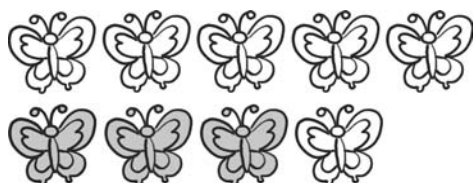
2.



3.



4.



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**Use a model to help you answer each question.**

*Example*

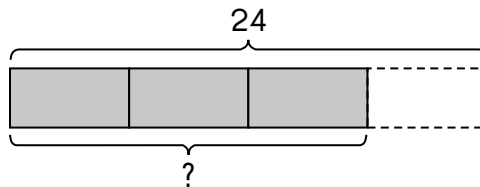
What is  $\frac{3}{4}$  of 24?

4 units = 24

1 unit = 6

3 units =  $6 \times 3 = 18$

So,  $\frac{3}{4}$  of 24 = 18.



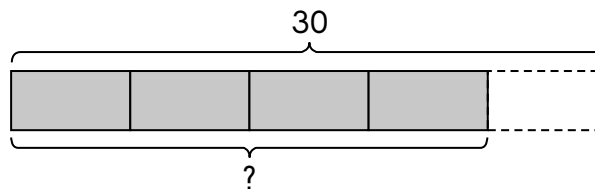
**5.** What is  $\frac{4}{5}$  of 30?

5 units = \_\_\_\_\_

1 unit = \_\_\_\_\_

4 units = \_\_\_\_\_

So,  $\frac{4}{5}$  of 30 = \_\_\_\_\_.



**6.** What is  $\frac{5}{6}$  of 48?

**7.** What is  $\frac{5}{12}$  of 60?

**Solve.**

**8.**  $\frac{2}{3} \times 45$

$\frac{2}{3}$  of 45 is \_\_\_\_\_.

**9.**  $\frac{4}{9} \times 36$

$\frac{4}{9}$  of 36 is \_\_\_\_\_.

**10.**  $\frac{2}{7} \times 35$

**11.**  $\frac{3}{8} \times 32$

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## Lesson 6.8 Real-World Problems: Fractions

**Solve. Show your work.**

1. Arthur had \$90. He spent \$40 and gave \$20 to his brother. What fraction of Arthur's money is left?

2. A baker has 20 pounds of sugar. He uses  $\frac{3}{4}$  of the sugar to bake muffins. How much sugar does he have left?

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- 3.** Mya buys 6 goldfish and 4 angelfish.
- a.** What fraction of the fish are goldfish?
  
  
  
  
  
  
  
  
  
  
  - b.** Mya buys 2 more goldfish. What fraction of the fish are angelfish?
- 4.** Cheryl spends  $\frac{3}{10}$  of her savings on a book, and  $\frac{2}{5}$  of it on a pen.  
What fraction of her savings does Cheryl spend?



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

**Date:** \_\_\_\_\_

- 5.** Of the vehicles on the road,  $\frac{1}{2}$  are cars and  $\frac{1}{8}$  are motorcycles.  
What fraction of the vehicles are not cars or motorcycles?

- 6.** Allie's plant has a height of 6 meters. Rajon's plant grows  $\frac{3}{10}$  meter higher.  
How high does Rajon's plant grow?

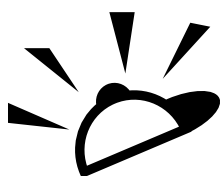
Name: \_\_\_\_\_

Date: \_\_\_\_\_

7. There are 10 packets of ham. Of the packets,  $\frac{2}{5}$  are turkey ham. Each packet of turkey ham weighs  $\frac{1}{3}$  pound. What is the total weight of the turkey ham?
8. Carla spends  $\frac{6}{4}$  hours exercising every day for 12 days. She spends  $\frac{1}{2}$  of her exercise time every day lifting weights. How much time does Carla spend lifting weights during the 12 days?

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

Date: \_\_\_\_\_



## Put on Your Thinking Cap!

- Justin buys a pair of pants and a shirt. He spends  $\frac{2}{5}$  of the total money on the shirt. He pays \$27 for the pair of pants. How much does Justin pay for the shirt?
- Of all the peppers the chef has,  $\frac{5}{7}$  are red and the rest are green. The chef has a total of 34 green peppers. How many peppers does she have altogether?

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

Date: \_\_\_\_\_

3. A basket  $\frac{1}{2}$  full of apples weighs 8 pounds. When the basket is filled with apples, it weighs 11 pounds. What is the weight of the empty basket?

4. Write the fractions  $\frac{2}{9}$ ,  $\frac{1}{3}$ ,  $\frac{1}{6}$ ,  $\frac{7}{18}$ ,  $\frac{4}{9}$ , and  $\frac{5}{18}$  in the boxes. The three fractions on each side of the triangle should have a sum of 1.

