

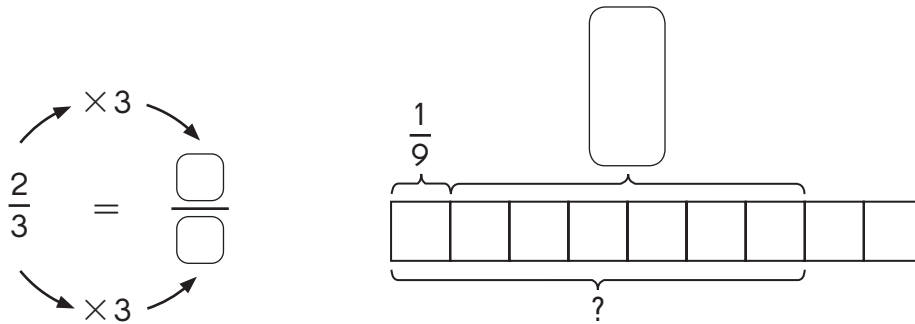
CHAPTER
6

Fractions and Mixed Numbers

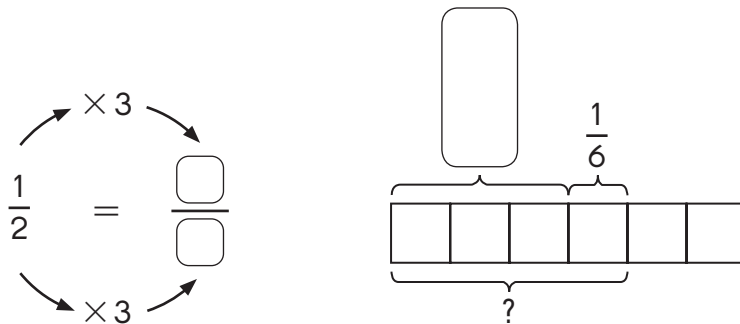
Lesson 6.1 Adding Fractions

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



Name: _____

Date: _____

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.

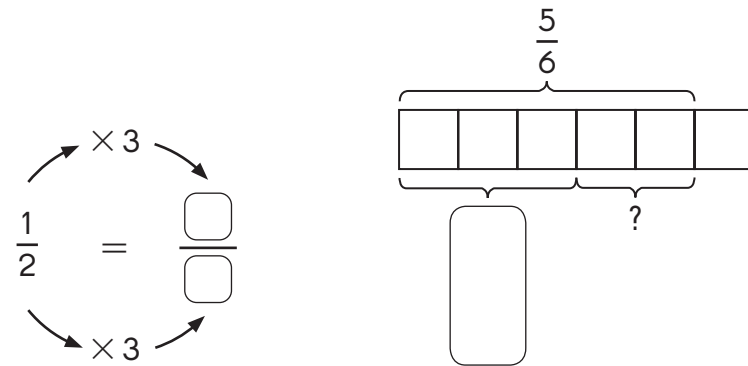
9. What is the sum of $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{2}{4}$?

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

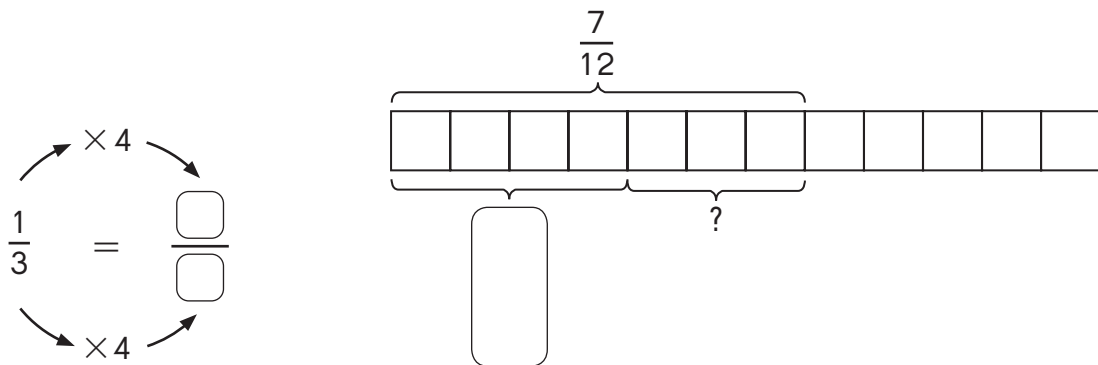
Lesson 6.2 Subtracting Fractions

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



Name: _____

Date: _____

Subtract. Write each answer in simplest form.

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

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

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

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

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

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

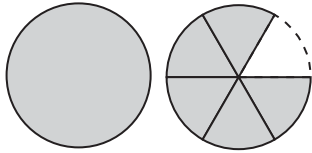
9. The difference between $\frac{7}{10}$ and $\frac{3}{5}$ is $\boxed{}$.

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

Lesson 6.3 Mixed Numbers

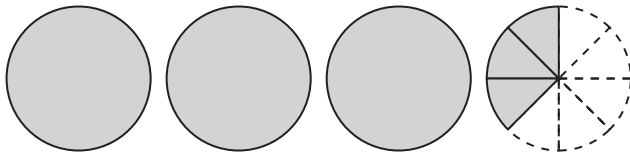
Write a mixed number for each model.

1.



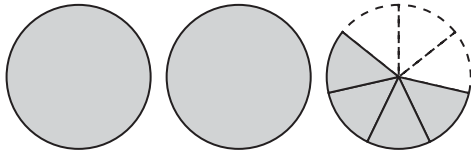
$$1 + \frac{5}{6} = \boxed{}$$

2.



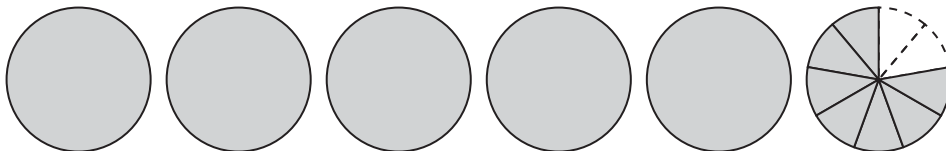
$$3 + \frac{3}{8} = \boxed{}$$

3.



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

4.



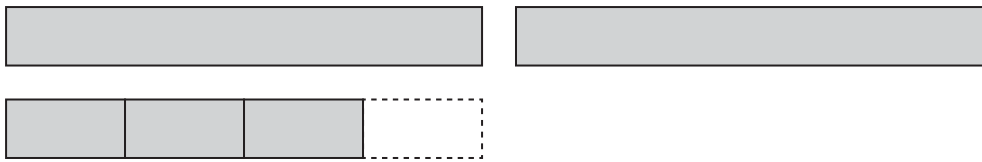
$$5 + \frac{7}{9} = \boxed{}$$

Name: _____

Date: _____

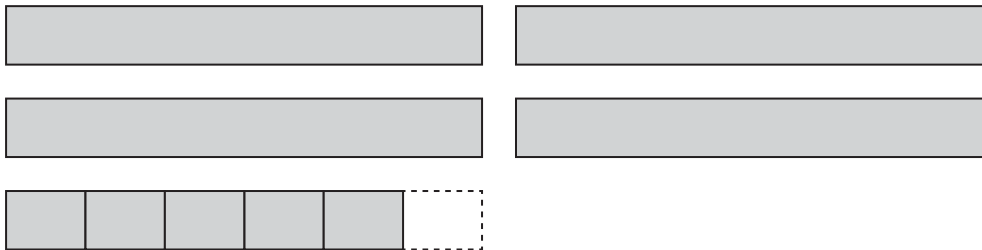
Write a mixed number for each model.

5.



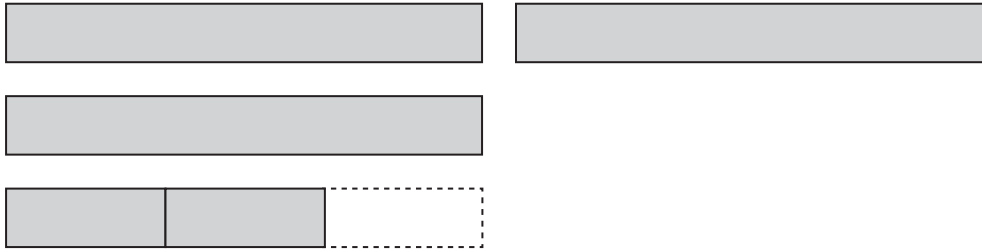
wholes and fourths is .

6.



wholes and sixths is .

7.

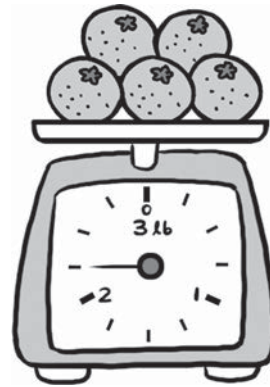
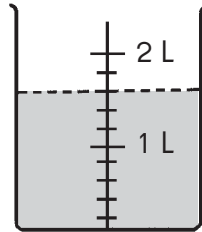


wholes and thirds is .

Name: _____

Date: _____

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

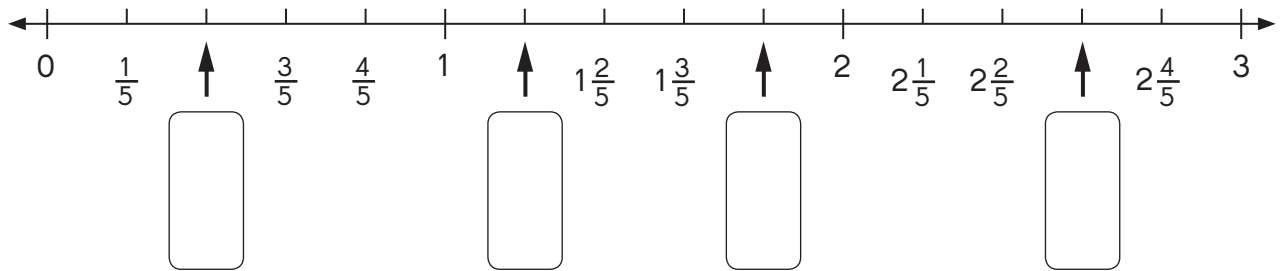
19. $3\frac{9}{12} =$

Name: _____

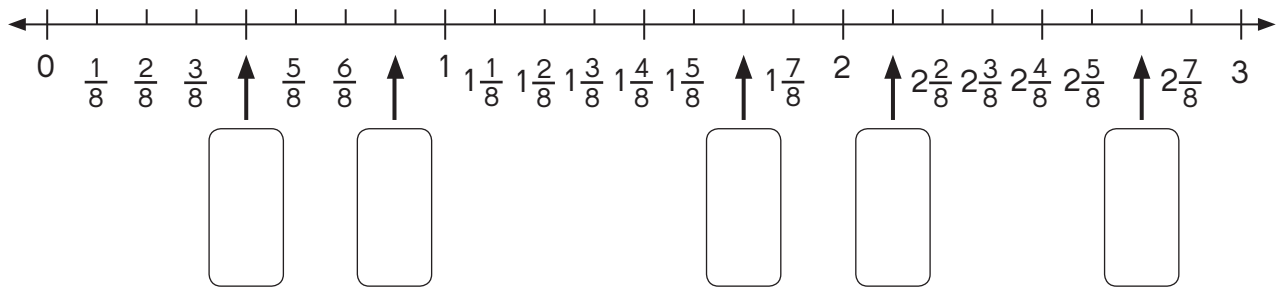
Date: _____

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

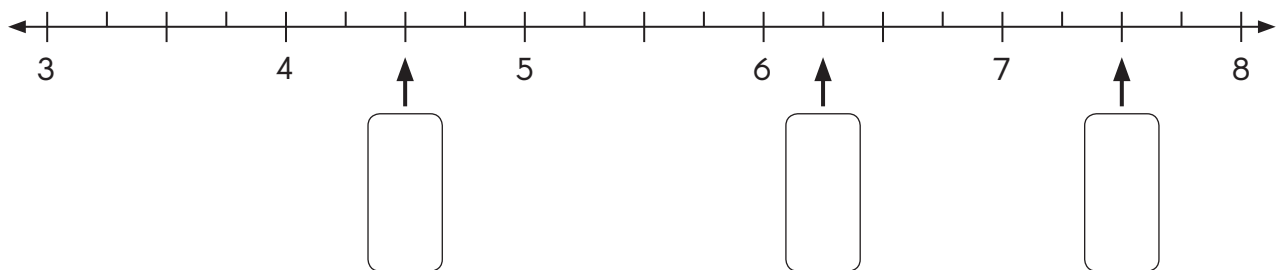
20.



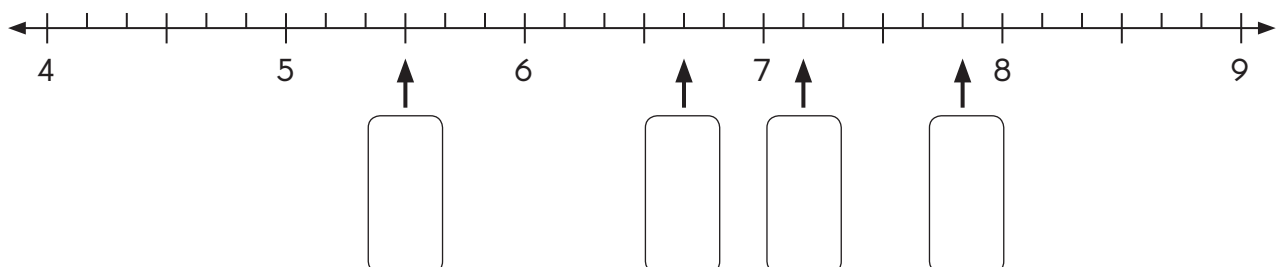
21.



22.



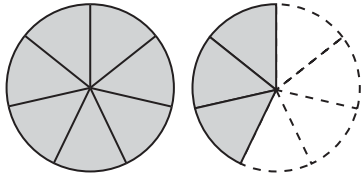
23.



Lesson 6.4 Improper Fractions

Write each mixed number as an improper fraction.

1.



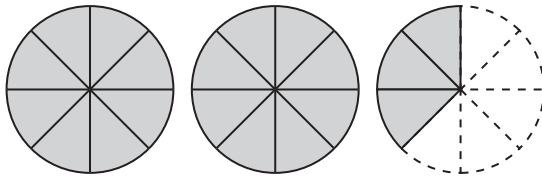
a. $1 =$ _____ sevenths

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

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

=

2.



a. $2 =$ _____ eighths

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

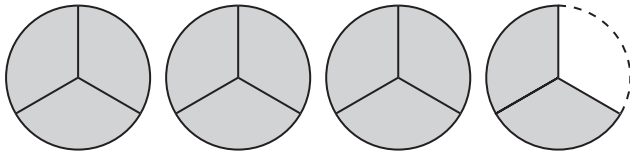
c. $2\frac{3}{8} =$ _____ eighths

=

Name: _____

Date: _____

3.



a. $3 =$ _____ thirds

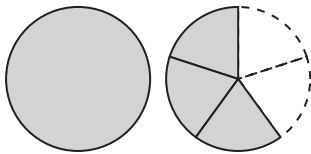
b. $\frac{2}{3} =$ _____ thirds

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

=

Write the improper fractions for the shaded parts.

4.



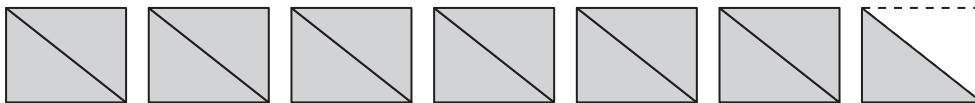
$1\frac{3}{5} =$

5.



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

6.



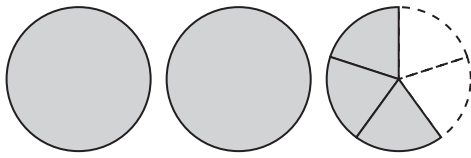
$6\frac{1}{2} =$

Name: _____

Date: _____

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

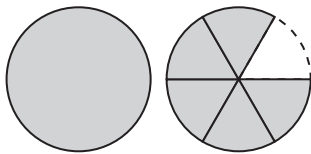
7.



Mixed number:

Improper fraction:

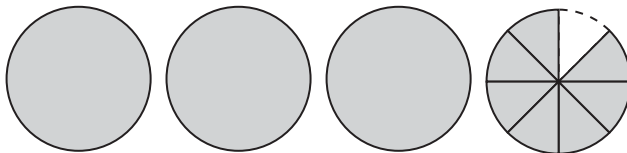
8.



Mixed number:

Improper fraction:

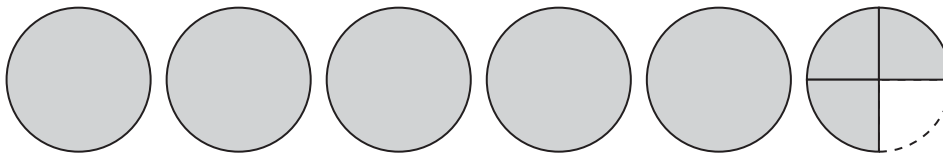
9.



Mixed number:

Improper fraction:

10.



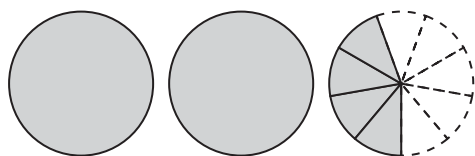
Mixed number:

Improper fraction:

Name: _____

Date: _____

11.



Mixed number:

Improper fraction:

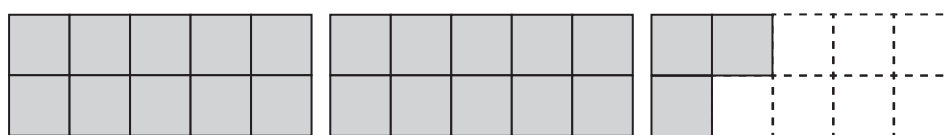
12.



Mixed number:

Improper fraction:

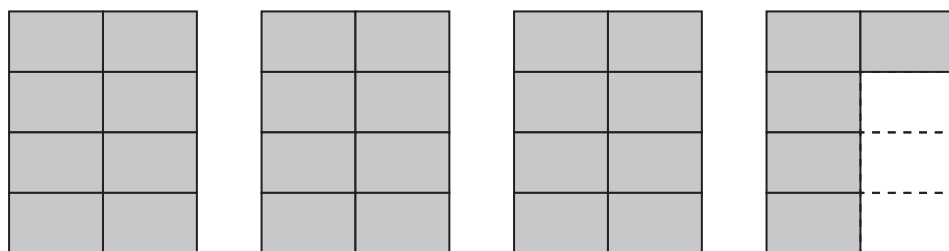
13.



Mixed number:

Improper fraction:

14.



Mixed number:

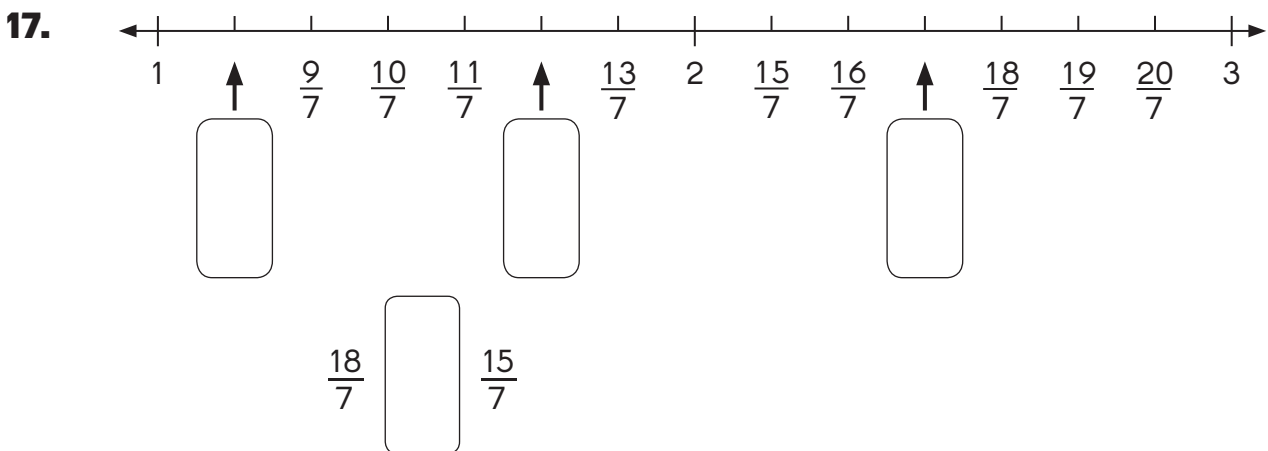
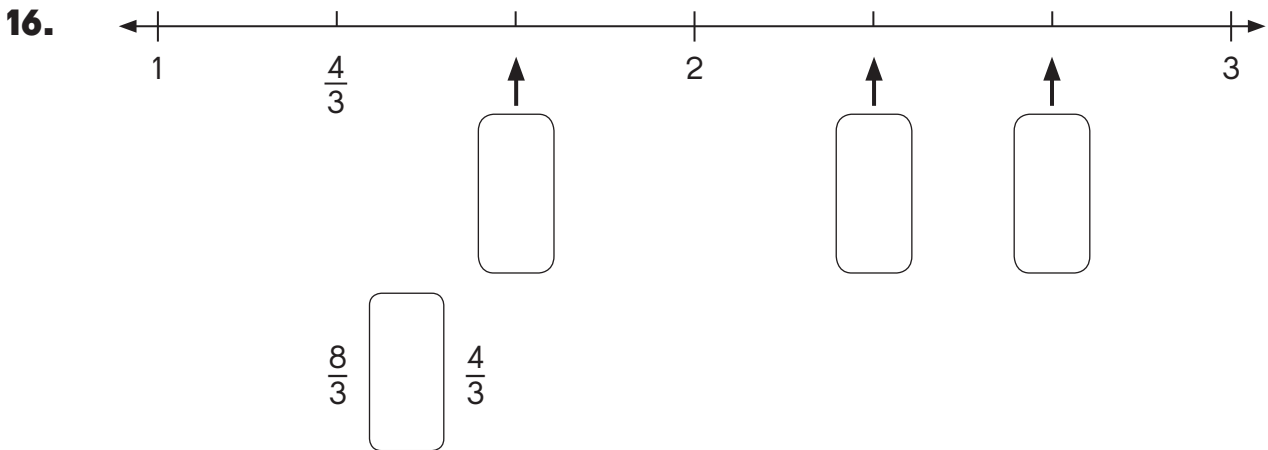
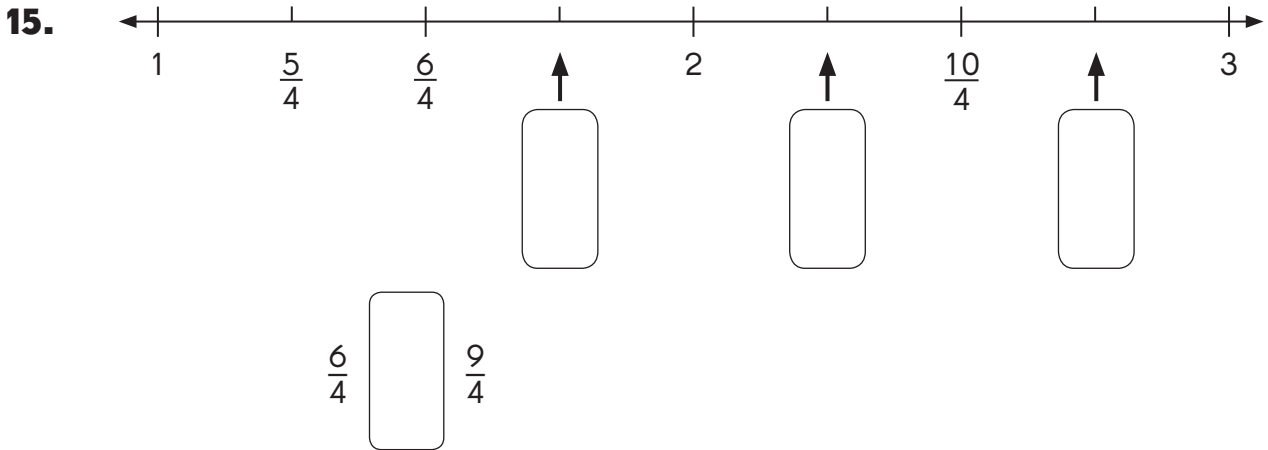
Improper fraction:

Name: _____

Date: _____

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

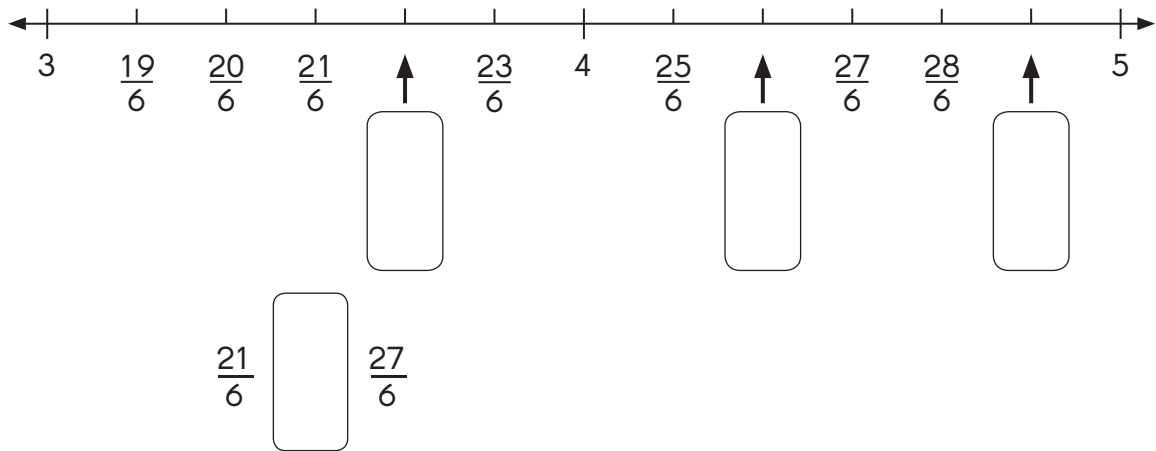
Fill in the box using the line plot with "<" or ">."



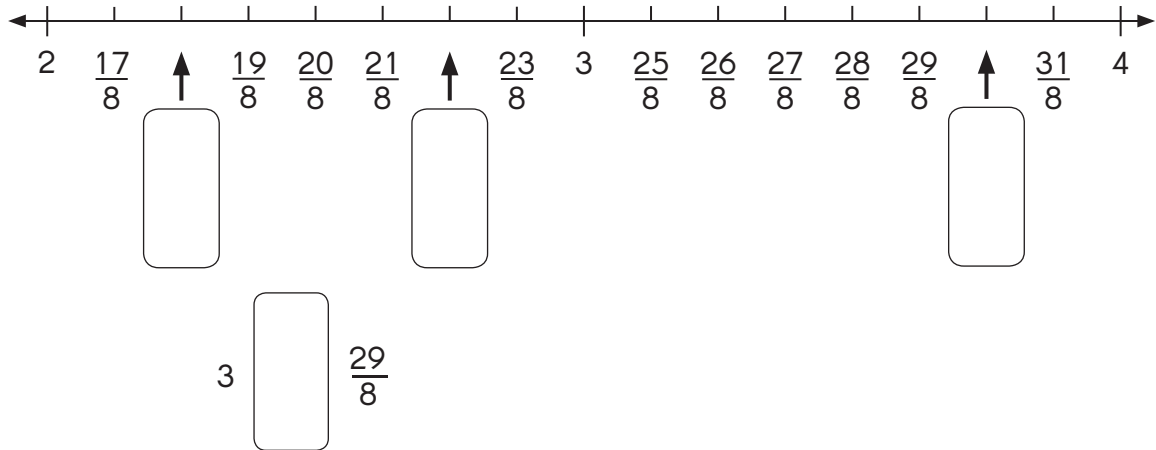
Name: _____

Date: _____

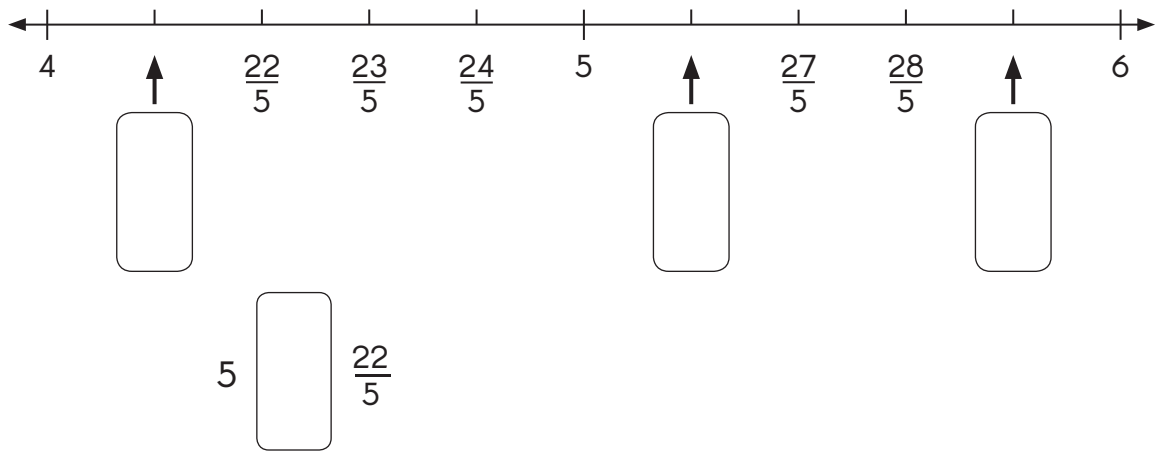
18.



19.



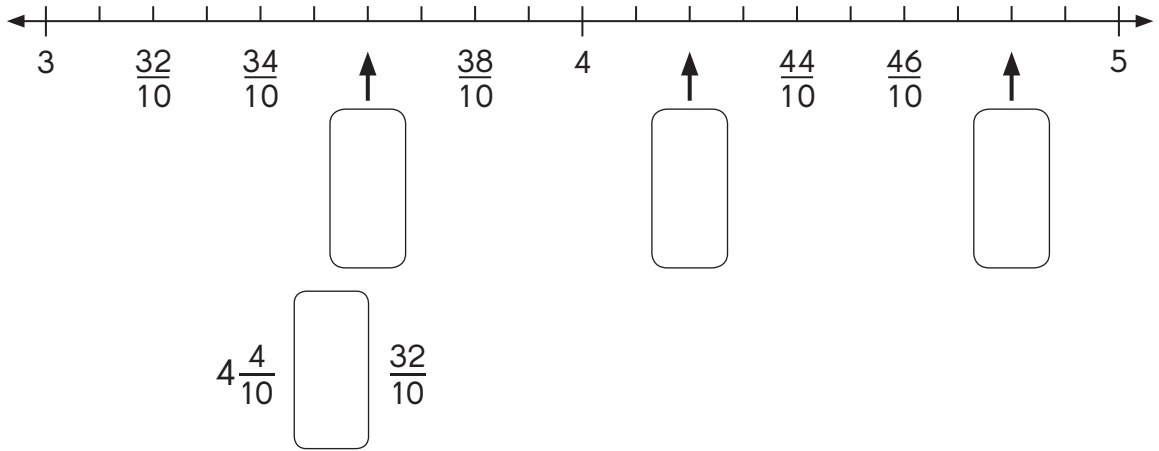
20.



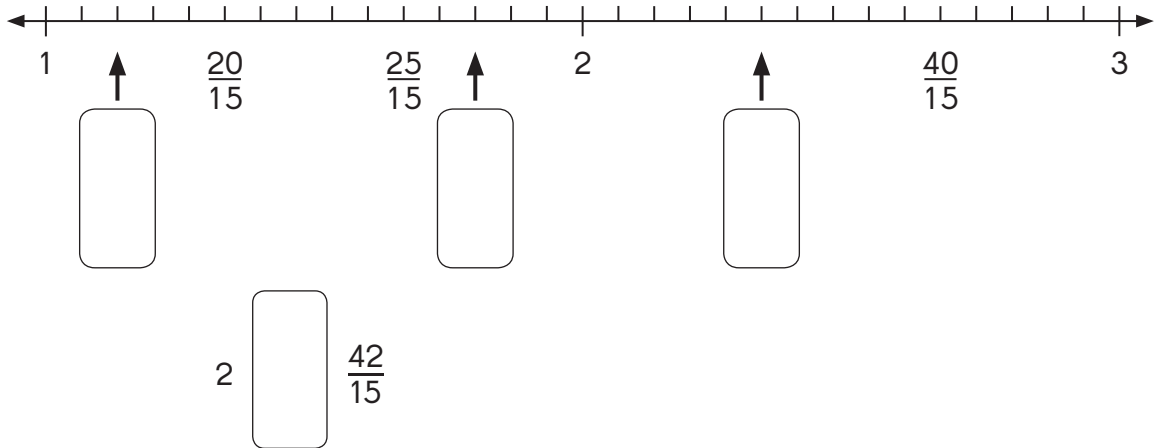
Name: _____

Date: _____

21.



22.



Lesson 6.5 Renaming Improper Fractions and Mixed Numbers

Express each improper fraction as a mixed number.

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

$$= 5 + \frac{\square}{2}$$

$$= 5 \frac{\square}{2}$$

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

$$= 6 + \frac{\square}{3}$$

$$= 6 \frac{\square}{3}$$

3. $\frac{13}{4} = \frac{\square}{4} + \frac{\square}{4}$

$$= 3 + \frac{\square}{4}$$

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

4. $\frac{23}{5} = \frac{\square}{5} + \frac{\square}{5}$

$$= 4 + \frac{\square}{5}$$

$$= 4 \frac{\square}{5}$$

5. $\frac{27}{10} = \frac{\square}{10} + \frac{\square}{10}$

$$= \square + \frac{\square}{10}$$

$$= \boxed{}$$

6. $\frac{26}{7} = \frac{\square}{7} + \frac{\square}{7}$

$$= \square + \frac{\square}{7}$$

$$= \boxed{}$$

Name: _____

Date: _____

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

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

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

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

Name: _____

Date: _____

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

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

Name: _____

Date: _____

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

Name: _____

Date: _____

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

Name: _____

Date: _____

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

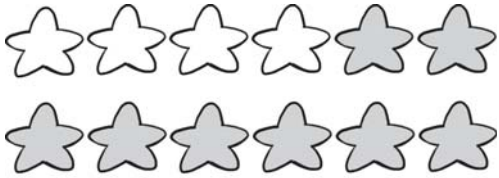
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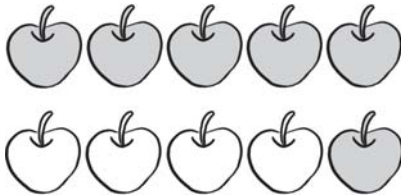
Lesson 6.7 Fraction of a Set

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

1.



2.



3.



4.



Name: _____

Date: _____

Use a model to help you answer each question.

Example

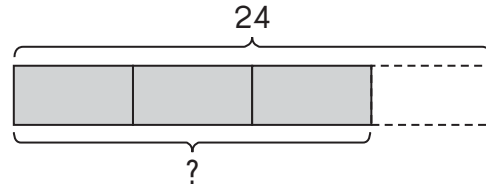
What is $\frac{3}{4}$ of 24?

4 units = 24

1 unit = 6

3 units = $6 \times 3 = 18$

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



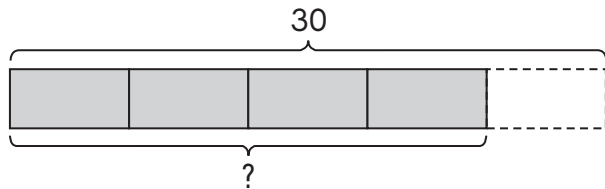
5. What is $\frac{4}{5}$ of 30?

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. $\frac{2}{3} \times 45 =$

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

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

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

12. $\frac{5}{6} \times 60 =$

13. $\frac{3}{4} \times 36 =$

14. $\frac{7}{9} \times 45 =$

15. $\frac{3}{5} \times 40 =$

Name: _____

Date: _____

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?

Name: _____

Date: _____

- 3.** Mya buys 6 goldfish and 4 angelfish.
- What fraction of the fish are goldfish?

 - 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 $\frac{2}{5}$ 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?

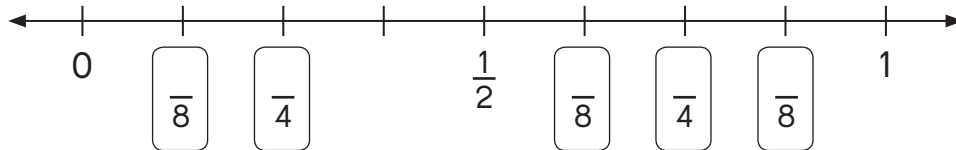
Name: _____

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?

Lesson 6.9 Line Plots with Fractional Units

1. This line has 8 equal intervals from 0 to 1. Fill in the missing fractional units



Fill in the blanks using the above line plot.

2. _____ < _____

3. _____ < _____

4. _____ > _____

5. _____ > _____

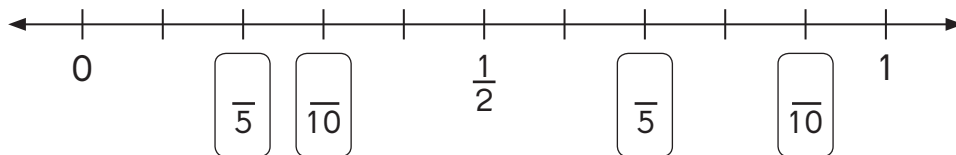
6. $\frac{1}{2} + \frac{5}{8} =$

7. $\frac{1}{4} + \frac{7}{8} =$

8. $\frac{7}{8} - \frac{3}{4} =$

9. $\frac{3}{4} - \frac{3}{8} =$

10. This line has 10 equal intervals from 0 to 1. Fill in the missing fractional units.



Fill in the blanks using the above line plot.

11. _____ < _____

12. _____ < _____

Name: _____

Date: _____

13. _____ > _____

14. _____ > _____

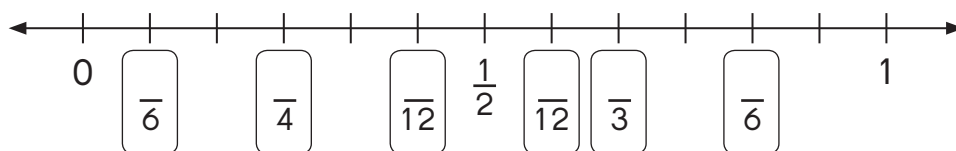
15. $\frac{3}{10} + \frac{4}{5} =$

16. $\frac{7}{10} + \frac{1}{2} =$

17. $\frac{9}{10} - \frac{1}{2} =$

18. $\frac{4}{5} - \frac{7}{10} =$

19. This line has 12 equal intervals from 0 to 1. Fill in the missing fractional units.



Fill in the blanks using the above line plot.

20. _____ < _____

21. _____ < _____

22. _____ < _____

23. _____ > _____

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

25. $\frac{7}{12} + \frac{1}{4} =$

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

27. $\frac{11}{12} - \frac{1}{2} =$

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.

