

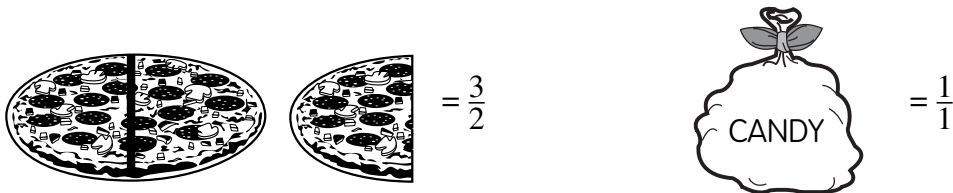
## Facts and Reminders

### Improper Fractions

An *improper fraction* always has a numerator equal to or greater than the denominator. The examples below are all improper fractions.

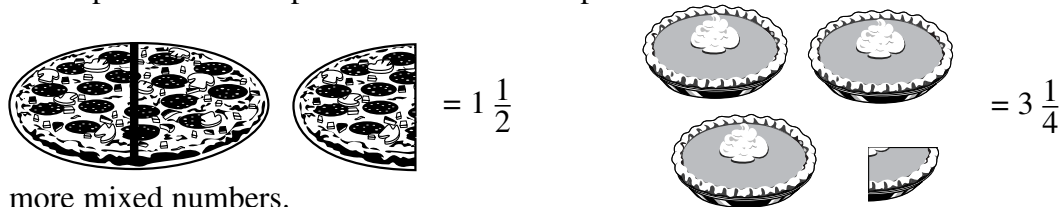
$$\frac{3}{2} \quad \frac{9}{9} \quad \frac{11}{10} \quad \frac{15}{3} \quad \frac{22}{12} \quad \frac{12}{9}$$

Improper fractions are always equal to or greater than one. An improper fraction always means one or more than one whole object. It is one pizza or more than one pizza. It is one complete bag of candy or more than one complete bag.



### Mixed Numbers

A *mixed number* contains a whole number and a fraction. It is always greater than one. For example, it might be one whole pizza and part of another. A mixed number might indicate three whole pies and part of another pie. Look at the examples below.



Here are more mixed numbers.

$$1\frac{1}{3} \quad 2\frac{2}{5} \quad 7\frac{1}{2} \quad 3\frac{1}{4} \quad 4\frac{2}{7} \quad 8\frac{1}{6}$$

### Changing Improper Fractions to Mixed Numbers or Whole Numbers

An improper fraction can be reduced to a whole number or a mixed number by dividing the denominator into the numerator. The quotient can be written as a whole number and the remainder, if there is one, as a fraction. Look at the example below.

$$\begin{array}{l} \text{(numerator)} \quad 7 \\ \text{(denominator)} \quad 3 \end{array} \quad \begin{array}{r} 2 \text{ R}1 \text{ (quotient)} \\ 3 \overline{)7} \end{array} \quad \frac{7}{3} = 2\frac{1}{3}$$

Here are more examples.

$$\frac{3}{2} = 1\frac{1}{2} \quad \frac{7}{5} = 1\frac{2}{5} \quad \frac{12}{4} = 3$$

The mixed number  $1\frac{1}{2}$  and the improper fraction  $\frac{3}{2}$  both indicate the same amount. The mixed number  $1\frac{2}{5}$  and the improper fraction  $\frac{7}{5}$  both equal the same amount. The whole number 3 and the improper fraction  $\frac{12}{4}$  indicate the same amount.

# Greater Than One

## Working with Improper Fractions

An *improper fraction* always has a denominator smaller than or equal to the numerator. An improper fraction always indicates a value equal to or greater than one. The examples below are improper fractions.

$$\frac{3}{2} \quad \frac{9}{4} \quad \frac{6}{5} \quad \frac{9}{9} \quad \frac{11}{8}$$

**Directions:** Read the Facts and Reminders page for this unit. Circle the improper fraction in each pair below.

1.  $\frac{4}{3}$        $\frac{1}{4}$

2.  $\frac{2}{8}$        $\frac{12}{11}$

3.  $\frac{6}{5}$        $\frac{1}{5}$

4.  $\frac{9}{4}$        $\frac{1}{7}$

5.  $\frac{7}{7}$        $\frac{1}{2}$

6.  $\frac{7}{3}$        $\frac{7}{8}$

7.  $\frac{4}{5}$        $\frac{6}{2}$

8.  $\frac{8}{2}$        $\frac{5}{9}$

9.  $\frac{10}{4}$        $\frac{3}{5}$

**Directions:** Study the Facts and Reminders page for this unit. Convert each of these improper fractions to a whole number. (*Remember:* Divide the denominator into the numerator to convert an improper fraction to a whole number.)

10.  $\frac{8}{8} =$

11.  $\frac{15}{5} =$

12.  $\frac{14}{7} =$

13.  $\frac{35}{5} =$

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

15.  $\frac{8}{2} =$

16.  $\frac{3}{1} =$

17.  $\frac{25}{5} =$

18.  $\frac{22}{11} =$

**Directions:** Circle the fraction with the highest value in each pair of improper fractions below.

19.  $\frac{5}{5}$        $\frac{10}{5}$

20.  $\frac{3}{3}$        $\frac{9}{3}$

21.  $\frac{8}{2}$        $\frac{9}{3}$

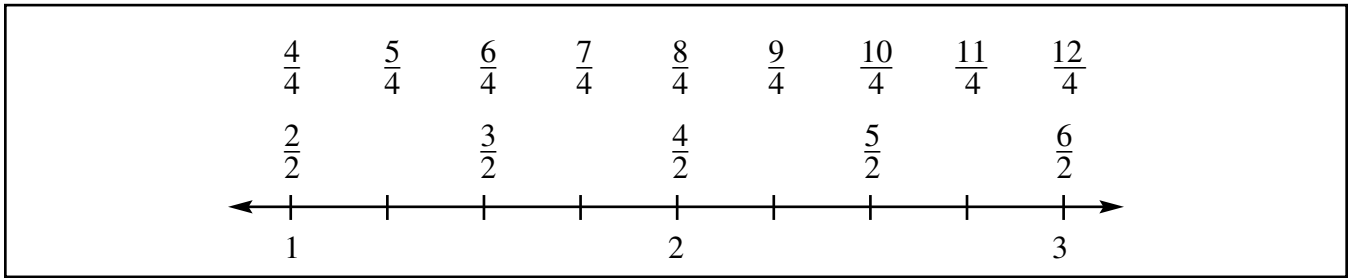
22.  $\frac{5}{1}$        $\frac{4}{1}$

23.  $\frac{6}{2}$        $\frac{12}{3}$

24.  $\frac{8}{4}$        $\frac{8}{2}$

# Greater Than One

## Comparing Improper Fractions



**Directions:** Study the number line shown above. Circle the largest fraction in each pair listed below. Write an equal sign (=) if the fractions are equal to each other.

1.  $\frac{3}{2}$        $\frac{5}{2}$

2.  $\frac{4}{2}$        $\frac{8}{4}$

3.  $\frac{6}{2}$        $\frac{6}{4}$

4.  $\frac{7}{4}$        $\frac{5}{2}$

5.  $\frac{9}{4}$        $\frac{6}{2}$

6.  $\frac{11}{4}$        $\frac{3}{2}$

7.  $\frac{8}{4}$        $\frac{6}{2}$

8.  $\frac{5}{2}$        $\frac{10}{4}$

9.  $\frac{12}{4}$        $\frac{5}{2}$

10.  $\frac{6}{2}$        $\frac{12}{4}$

11.  $\frac{3}{2}$        $\frac{6}{4}$

12.  $\frac{11}{4}$        $\frac{5}{2}$

**Directions:** Change each improper fraction to a mixed number. Then illustrate each of the fractions as pies or pizzas. The first one is done for you.

13.  $\frac{5}{4} = 1 \frac{1}{4}$



14.  $\frac{3}{2} =$

15.  $\frac{7}{3} =$

16.  $\frac{8}{3} =$

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

18.  $\frac{7}{5} =$

19.  $\frac{7}{4} =$

20.  $\frac{5}{2} =$

21.  $\frac{12}{8} =$

# Greater Than One

## Changing Improper Fractions to Mixed Numbers

An *improper fraction* always equals either a whole number or a mixed number. To convert an improper fraction into a whole number or mixed number, divide the denominator into the numerator. Write the quotient as a whole number and the remainder, if there is one, as a fraction.

$$\frac{7}{4} = \begin{array}{r} 1 \text{ R } 3 \\ 4 \overline{)7} \end{array} = 1 \frac{3}{4}$$

**Directions:** Study the Facts and Reminders page for this unit. Change each of these improper fractions to a mixed number.

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

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

3.  $\frac{10}{3} =$

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

5.  $\frac{12}{5} =$

6.  $\frac{13}{4} =$

7.  $\frac{10}{9} =$

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

9.  $\frac{7}{6} =$

10.  $\frac{14}{5} =$

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

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

13.  $\frac{19}{5} =$

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

15.  $\frac{15}{7} =$

Sometimes the fraction part of a mixed number can be simplified or reduced, too. For example,  $\frac{6}{4} = 1 \frac{2}{4} = 1 \frac{1}{2}$  (The  $\frac{2}{4}$  can be simplified to  $\frac{1}{2}$ .)

**Directions:** Change these improper fractions to a mixed number. Simplify or reduce the fraction to lowest terms. The first one is done for you.

16.  $\frac{8}{6} = 1 \frac{2}{6} = 1 \frac{1}{3}$

17.  $\frac{9}{6} =$

18.  $\frac{10}{4} =$

19.  $\frac{12}{8} =$

20.  $\frac{14}{4} =$

21.  $\frac{10}{8} =$

22.  $\frac{14}{10} =$

23.  $\frac{12}{9} =$

24.  $\frac{10}{6} =$

25.  $\frac{15}{10} =$

# Answer Key

## Page 57

- $D = RT$   
 $D = 50 \times 5$   
 $D = 250$  miles
- $D = RT$   
 $D = 120 \times 7$   
 $D = 840$  miles
- $D = RT$   
 $D = 9 \times 1.25$   
 $D = 11.25$  miles
- $D = RT$   
 $D = 195 \times 3$   
 $D = 585$  miles
- $D = RT$   
 $D = 7 \times 15.3$   
 $D = 107.1$  miles
- $D = RT$   
 $D = 7 \times 12.3$   
 $D = 86.1$  miles
- $D = RT$   
 $D = 35.5 \times 11$   
 $D = 390.5$  miles
- $D = RT$   
 $D = 6.4 \times 5$   
 $D = 32$  miles

## Page 58

- $T = D/R$   
 $T = 1500/50$   
 $T = 30$  hrs.
- $T = D/R$   
 $T = 42/14$   
 $T = 3$  hrs.
- $T = D/R$   
 $T = 420/40$   
 $T = 10.5$  hrs.
- $T = D/R$   
 $T = 3250/50$   
 $T = 65$  hrs.
- $T = D/R$   
 $T = 44/5.5$   
 $T = 8$  hrs.
- $T = D/R$   
 $T = 2980/40$   
 $T = 74.5$  hrs.
- $T = D/R$   
 $T = 2400/120$   
 $T = 20$  hrs.

## Page 60

- 8
- 24
- 14
- 38

5. 46

6. 78

7. 118

8. 332

9. 104

10. 28

11. 78

12. 124

13. 88

14. 134

15. 198

16. 56

17. 98

18. 296

19. even

20. odd

21. even

22. odd

23. odd

24. even

25. even

26. even

27. even

28. 110

29. 100

30. Answers will vary.

## Page 61

- 592; even
- 1,152; even
- 4,020; even
- 9,676; even
- even
- 428; even
- 428; even
- 98; even
- 6,404; even
- even
- 16,604; even
- 8,094; even
- 11,324; even
- 13,294; even
- even
- 2; even
- 2,018; even
- 118; even
- 6,648; even
- even

## Page 62

- 752; even
- 384; even
- 4,440; even
- 3,216; even

5. 4,020; even

6. 10,472; even

7. 43,824; even

8. 21,616; even

9. even

10. 495; odd

11. 363; odd

12. 9,513; odd

13. 9,139; odd

14. 18,473; odd

15. 13,293; odd

16. 11,439; odd

17. 16,711; odd

18. odd

19. 8,584; even

20. 30,774; even

21. 19,762; even

22. 3,696; even

23. even

## Page 64

- $4/3$
- $12/11$
- $6/5$
- $9/4$
- $7/7$
- $7/3$
- $6/2$
- $8/2$
- $10/4$
- 1
- 3
- 2
- 7
- 6
- 4
- 3
- 5
- 2
- $10/5$
- $9/3$
- $8/2$
- $5/1$
- $12/3$
- $8/2$

## Page 65

- $5/2$
- =
- $6/2$
- $5/2$
- $6/2$
- $11/4$
- $6/2$

8. =

9.  $12/4$

10. =

11. =

12.  $11/4$

13.  $1\ 1/4$

14.  $1\ 1/2$

15.  $2\ 1/3$

16.  $2\ 2/3$

17.  $2\ 1/4$

18.  $1\ 2/5$

19.  $1\ 3/4$

20.  $2\ 1/2$

21.  $1\ 1/2$

## Page 66

- $2\ 1/4$
- $4\ 1/2$
- $3\ 1/3$
- $1\ 1/7$
- $2\ 2/5$
- $3\ 1/4$
- $1\ 1/9$
- $1\ 1/3$
- $1\ 1/6$
- $2\ 4/5$
- $3\ 1/2$
- $3\ 3/4$
- $3\ 4/5$
- $1\ 2/7$
- $2\ 1/7$
- $1\ 1/3$
- $1\ 1/2$
- $2\ 1/2$
- $1\ 1/2$
- $3\ 1/2$
- $1\ 1/4$
- $1\ 2/5$
- $1\ 1/3$
- $1\ 2/3$
- $1\ 1/2$

## Page 68

- $4\ 3/4$
- $9\ 5/6$
- $12\ 5/6$
- $8\ 19/20$
- $12\ 9/10$
- $10\ 7/8$
- $5\ 2/3$
- $11\ 7/8$
- $7\ 1/6$
- $10\ 1/4$
- $10\ 1/4$