Solve each equation. Check your answers.

1. \( \frac{2}{3}x = 10 \)
2. \( 5t = \frac{10}{15} \)
3. \( \frac{6}{7}a = 9 \)
4. \( \frac{r}{11} = 12 \)
5. \( \frac{6b}{9} = 15 \)
6. \( 7y = \frac{7}{8} \)
7. \( \frac{4}{5}d = 15 \)
8. \( 4f = \frac{1}{9} \)
9. \( 7q = \frac{3}{5} \)
10. \( \frac{7}{8}s = 14 \)
11. \( \frac{h}{12} = 6 \)
12. \( \frac{3}{10}c = \frac{2}{3} \)
13. \( \frac{5g}{6} = \frac{7}{12} \)
14. \( \frac{3k}{9} = \frac{5}{6} \)
15. \( 5 \frac{1}{2}n = 3 \)

16. Anya worked \( 8 \frac{1}{4} \) hours on Saturday and \( 6 \frac{1}{4} \) hours on Sunday. She earned a total of $137.75 for both days combined. How much does Anya make per hour?

17. Ernest rode his bike \( 6 \frac{1}{4} \) miles on Saturday and \( 8 \frac{1}{2} \) miles on Sunday. He rode for a total of \( 88 \frac{1}{2} \) minutes for both days combined. How long does it take him to ride a mile on his bike?
Solving Fraction Equations: Multiplication and Division

Practice C

Solve each equation. Check your answers.

1. \( \frac{5}{3}x = 10 \)
   \( x = 15 \)

2. \( 5f = 15 \)
   \( f = 3 \)

3. \( \frac{4}{3}a = 9 \)
   \( a = \frac{27}{4} \)

4. \( 12r = 12 \)
   \( r = 1 \)

5. \( 5b + 2 = 22 \)
   \( b = 4 \)

6. \( 7y + \frac{7}{3} = 7 \)
   \( y = \frac{1}{3} \)

Use related facts to solve each equation. Then check each answer.

1. \( \frac{4}{9} \cdot 3 = x \)
   \( x = 12 \)

2. \( \frac{3}{4} \cdot 4 = y \)
   \( y = 3 \)

3. \( \frac{3}{5}x = \frac{2}{3} \)
   \( x = \frac{2}{3} \cdot \frac{5}{3} = \frac{10}{9} \)

4. \( \frac{3}{10} x = 6 \)
   \( x = 20 \)

5. \( \frac{3}{5} \times 1 = z \)
   \( z = \frac{3}{5} \)

6. \( \frac{1}{3} x = 3 \)
   \( x = 9 \)

Challenge

Crawly Creature Equations

A millipede called the walkma planipes holds the record for the creature with the most legs—750! However, most millipedes have only 30 legs. Shown below are some other many-legged creatures.

Let \( L \) = the number of legs most millipedes have. Use this information to solve the equations and find how many legs each crawly creature has.

1. \( \frac{8}{15} \cdot \frac{3}{5} = \frac{2}{5} \)
2. \( \frac{5}{6} \cdot \frac{1}{3} = \frac{5}{18} \)
3. \( \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{9} \)

Caterpillars: 16 legs
Spiders: 8 legs
Insects: 6 legs
Crabs: 10 legs

Problem Solving

Solving Fraction Equations: Multiplication and Division

1. The number of T-shirts is multiplied by \( \frac{3}{4} \) and the product is 18. Write and solve an equation for the number of T-shirts, where \( t \) represents the number of T-shirts.
   \( t \cdot \frac{3}{4} = 18 \); \( t = 24 \)

2. The number of students is divided by 18 and the quotient is \( \frac{5}{3} \). Write and solve an equation for the number of students, where \( s \) represents the number of students.
   \( s \div 18 = \frac{5}{3} \); \( s = 30 \)

3. The number of players is multiplied by \( \frac{2}{3} \) and the product is 25. Write and solve an equation for the number of players, where \( p \) represents the number of players.
   \( p \cdot \frac{2}{3} = 25 \); \( p = 37.5 \)

4. The number of chairs is divided by \( \frac{1}{3} \) and the quotient is 12. Write and solve an equation for the number of chairs, where \( c \) represents the number of chairs.
   \( c \div \frac{1}{3} = 12 \); \( c = 36 \)

5. Paco bought 10 feet of rope. He cut it into several 1 1/2-foot pieces. Which equation can you use to find how many pieces of rope Paco cut?
   A. \( \frac{1}{2} + 10 = x \)
   B. \( 1 + x = 10 \)
   C. \( 10 + x = \frac{5}{3} \)
   D. \( 10x = \frac{5}{3} \)

6. Each square on the graph paper has an area of \( \frac{2}{5} \) square inch. What is the length and width of each square?
   A. \( \frac{1}{3} \) inch
   B. \( \frac{1}{2} \) inch
   C. \( \frac{1}{3} \) inch
   D. \( \frac{1}{5} \) inch

7. Which operation should you use to solve the equation \( 6x = \frac{3}{4} \)?
   A. addition
   B. subtraction
   C. multiplication
   D. division

8. A fraction divided by \( \frac{2}{3} \) is equal to \( \frac{1}{2} \). What is that fraction?
   A. \( \frac{1}{3} \)
   B. \( \frac{1}{2} \)
   C. \( \frac{1}{3} \)
   D. \( \frac{1}{2} \)