2-1 & 2-2 Solve One-Step and Two-Step Equations

Solve:

1. $\dfrac{3}{4}x = \dfrac{5}{4}$

2. $6 - 4x = 34$

3. $\dfrac{3}{5}x + 6 = -12$

4. $\dfrac{x-3}{7} = 5$

Identify a variable and write an equation to represent this situation. Then solve it.

5. Two brothers both play on the varsity basketball team. The older one scored 18 points, which was 12 points less than twice what the younger brother scored. How many points did the younger brother score?

2-3 Solve Multi-Step Equations

Solve:

1. $3(n-5)=-21$

2. $12-\dfrac{w}{6}=24$

3. $5x-3=9x+17$

4. $\dfrac{3h-7}{4}=\dfrac{7}{2}$

5. $4(2w-1)-2w=-22$

2-4 Solve Equations with Variables on Both Sides

Solve:

1. $-3m+11=2m-14$

2. $4-(x+2)=-3x+6$

3. $\dfrac{3}{4}t-2=5-\dfrac{1}{4}t$

4. $6(d-1)+9=8(d+3)-3$

5. $-8c-18=-3(c-4)$

Per: _____ ☐

2-5 Solve Literal Equations

Solve for x:

1. $3x - 4n = 12$

2. $x(r-2) = 16$

3. $\dfrac{x+1}{4} = 3y$

4. $5h - 2f = 2x + f$

5. Solve the following equation for y:
    $2x - 5y = 10$

2-6 Ratios, Rates, and Conversions

Convert as indicated. If necessary, give a reduced fraction or round to the nearest tenth.

1. 180 hours into days (24 hr = 1 day)

2. 30 min into seconds (60 sec = 1 min)

3. 130 pounds into kg   (1 kg = 2.2 lb)

4. 175 oz into pounds (16 oz = 1 lb)

5. Joel used five-eighths of a gallon of paint to cover a wall. How many ounces of paint did he use? (1 gal = 128 oz)

2-7 Solve Proportions

Solve. If necessary, leave answers as reduced fractions or a decimal rounded to the nearest tenth.

1. $\dfrac{6}{x} = \dfrac{4}{14}$

2. $\dfrac{6}{9} = \dfrac{8}{g}$

3. $\dfrac{5}{8} = \dfrac{x+2}{24}$
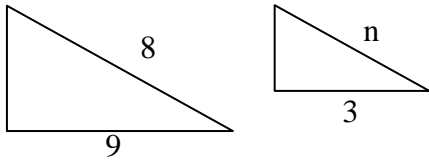
4. $\dfrac{3n+5}{3} = \dfrac{n-1}{9}$

Write a proportion to represent the situation, and then solve it. Round to the nearest tenth.

5. Mr. Fuller ran the first 2 miles of a race in 11 minutes. If he is able to maintain the same pace, how long will it take him to finish all 6.2 miles?
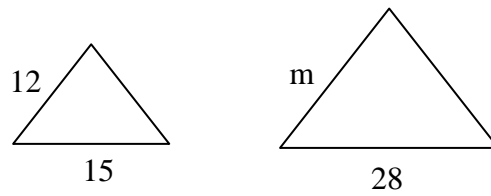
2-8 Proportions and Similar Figures

The figures in each pair are similar. Use a proportion to find the missing length. Round to the nearest tenth if necessary.
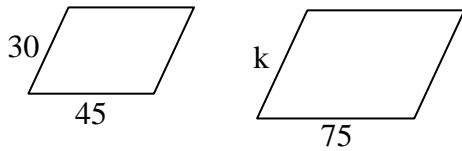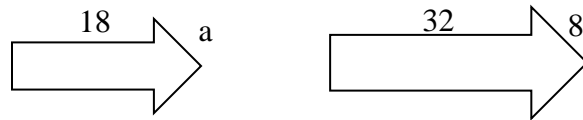
1.

8

n

3

9

2.

12

15

m

28

3.

30

45

k

75

4.

18

a

32

8

Write a proportion to represent this situation, and then solve it.

5. A professional model-maker is building a scale model of an airplane to go in a hotel lobby. The actual plane is about 200 ft long with a wingspan of about 240 ft. The model airplane will be 24 ft long. What will its wingspan be?

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2-9 Percents

Find the value requested. Round to the nearest tenth unless otherwise indicated.

1. 24 is what % of 144?

2. 12 is 28% of what number?

3. What is 32% of 81?

4. 150% of what number is 63?

5. Amanda took a survey of students in her math class. 27 out of the 34 students said their family had a pet. What percent of the students had pets?

2-10   Percent Change

Find the value requested. Round to the nearest tenth unless otherwise indicated.

1. A $59 sweater is on sale for $40. What percent decrease is this?

2. The price of a new laptop increased from $750 to $975. What is the percent increase?

3. Three years ago, a restaurant charged $9.95 for a burrito dinner. This year, the price is $13.95. What is the percent change?

4. A new kayak that originally cost $1299 was on sale for $824. What is the percent discount?

5. The total number of people who attended the Olympic swimming events in 2012 was 96,488. In 2016, that number grew to 112,563. What was the percent change?