

**LESSON**  
**7-3**

**Practice B**

**Proportions**

Find the missing value in each proportion.

1.  $\frac{24}{8} = \frac{n}{2}$

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2.  $\frac{4}{9} = \frac{20}{n}$

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3.  $\frac{n}{36} = \frac{5}{6}$

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4.  $\frac{n}{5} = \frac{4}{10}$

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

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6.  $\frac{6}{n} = \frac{3}{7}$

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7.  $\frac{5}{3} = \frac{n}{6}$

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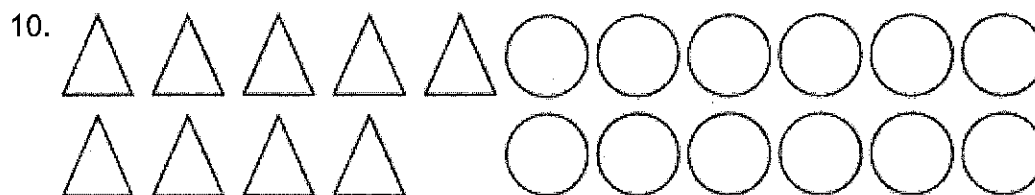
8.  $\frac{9}{6} = \frac{6}{n}$

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9.  $\frac{2}{130} = \frac{1}{n}$

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Write a proportion for each model.



12. Shane's neighbor pledged \$1.25 for every 0.5 miles that Shane swims in the charity swim-a-thon. If Shane swims 3 miles, how much money will his neighbor donate?

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13. Barbara's goal is to practice piano 20 minutes for every 5 minutes of lessons she takes. If she takes a 20 minute piano lesson this week, how many minutes should she practice this week?

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**LESSON**  
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**Review for Mastery**

**Proportions**

A proportion is an equation that shows two equivalent ratios.

$\frac{3}{4} = \frac{9}{12}$  is an example of a proportion.

$3 \cdot 12 = 36$  and  $4 \cdot 9 = 36$ . The cross products of proportions are equal.

You can use cross products to find the missing value in a proportion.

$$\frac{3}{x} = \frac{12}{48}$$

$12 \cdot x = 3 \cdot 48$  To find  $x$ , first find the cross products.

$$12x = 144$$

**Think:**  $144 \div 12 = x$  Then use a related math sentence to solve the equation.  
 $x = 12$

So,  $\frac{3}{12} = \frac{12}{48}$ .

**Find the cross products to solve each proportion.**

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

$x \cdot 4 = \underline{\hspace{2cm}}$

2.  $\frac{2}{3} = \frac{x}{6}$

$2 \cdot 6 = \underline{\hspace{2cm}}$

3.  $\frac{2}{5} = \frac{4}{x}$

$2 \cdot x = \underline{\hspace{2cm}}$

4.  $\frac{6}{x} = \frac{1}{3}$

$6 \cdot 3 = \underline{\hspace{2cm}}$

5.  $\frac{3}{8} = \frac{12}{x}$

6.  $\frac{3}{5} = \frac{6}{x}$

7.  $\frac{x}{8} = \frac{2}{16}$

8.  $\frac{2}{9} = \frac{4}{x}$

9.  $\frac{3}{4} = \frac{15}{x}$

10.  $\frac{1}{2} = \frac{x}{30}$

11.  $\frac{x}{5} = \frac{24}{30}$

12.  $\frac{25}{35} = \frac{5}{x}$

**LESSON**  
**7-3**

**Problem Solving**  
**Proportions**

Write the correct answer.

1. For most people, the ratio of the length of their head to their total height is 1:7. Use proportions to test your measurements and see if they match this ratio.  
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2. The ratio of an object's weight on Earth to its weight on the Moon is 6:1. The first person to walk on the Moon was Neil Armstrong. He weighed 165 pounds on Earth. How much did he weigh on the Moon?  
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3. It has been found that the distance from a person's eye to the end of the fingers of his outstretched hand is proportional to the distance between his eyes at a 10:1 ratio. If the distance between your eyes is 2.3 inches, what should the distance from your eye to your outstretched fingers be?  
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4. Chemists write the formula of ordinary sugar as  $C_{12}H_{22}O_{11}$ , which means that the ratios of 1 molecule of sugar are always 12 carbon atoms to 22 hydrogen atoms to 11 oxygen atoms. If there are 4 sugar molecules, how many atoms of each element will there be?  
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Circle the letter of the correct answer.

5. A healthy diet follows the ratio for meat to vegetables of 2.5 servings to 4 servings. If you eat 7 servings of meat a week, how many servings of vegetables should you eat?  
A 28 servings      C 14 servings  
B 17.5 servings      D 11.2 servings
6. A 150-pound person will burn 100 calories while sitting still for 1 hour. Following this ratio, how many calories will a 100-pound person burn while sitting still for 1 hour?  
F  $66\frac{2}{3}$  calories      H  $6\frac{2}{3}$  calories  
G  $66\frac{2}{3}$  calories      J 6 calories
7. Recently, 1 U.S. dollar was worth 0.68 euros. If you exchanged \$25 at that rate, how many euros would you get?  
A 15.82 euros  
B 17.00 euros  
C 23.42 euros  
D 36.76 euros
8. Recently, 1 U.S. dollar was worth 0.51 English pound. If you exchanged 500 English pounds, how many dollars would you get?  
F 255.00 U.S. dollars  
G 500.69 U.S. dollars  
H 980.39 U.S. dollars  
J 998.31 U.S. dollars