Lesson 1 Homework Practice

Factors and Multiples

Find the GCF of each set of numbers.

1. 12, 30
2. 50, 40
3. 28, 42, 56
4. 14, 56, 63

ANALYZE TABLES A store is organizing toys into bins. The toys must be put into bins so that each bin contains the same number of toys without mixing the toys.

5. What is the greatest number of toys that can be put in a bin?

6. How many bins are needed for each type of toy?

Find the LCM of each set of numbers.

7. 3, 5
8. 8, 12
9. 4, 5, 6
10. 5, 10, 15

11. Avery gets newsletters by e-mail. He gets one for sports every 5 days, one for model railroads every 10 days, and one for music every 8 days. If he got all three today, how many more days will it be until he gets all three newsletters on the same day again?
Lesson 1 Homework Practice

Factors and Multiples

Find the GCF of each set of numbers.

1. 12, 30  \[ \text{GCF} = 6 \]
2. 50, 40  \[ \text{GCF} = 10 \]
3. 28, 42, 56  \[ \text{GCF} = 14 \]
4. 14, 56, 63  \[ \text{GCF} = 7 \]

ANALYZE TABLES A store is organizing toys into bins. The toys must be put into bins so that each bin contains the same number of toys without mixing the toys.

5. What is the greatest number of toys that can be put in a bin?
   
   2 of each toy

6. How many bins are needed for each type of toy?

   6 bins for anemones, 7 bins for limpets, and 9 bins for snails

Find the LCM of each set of numbers.

7. 3, 5  \[ \text{LCM} = 15 \]
8. 8, 12  \[ \text{LCM} = 24 \]
9. 4, 5, 6  \[ \text{LCM} = 60 \]
10. 5, 10, 15  \[ \text{LCM} = 30 \]

11. Avery gets newsletters by e-mail. He gets one for sports every 5 days, one for model railroads every 10 days, and one for music every 8 days. If he got all three today, how many more days will it be until he gets all three newsletters on the same day again?

   40 days
Enrich

GCFs by Successive Division

Here is a different way to find the greatest common factor (GCF) of two numbers. This method works well for large numbers.

Find the GCF of 848 and 1,325.

Step 1  Divide the smaller number into the larger.

\[
\begin{array}{c}
1 \div 848 = 1 \text{ R} 477 \\
477 \div 848 = 1 \text{ R} 371 \\
371 \div 848 = 1 \text{ R} 477 \\
477 \div 371 = 1 \text{ R} 106 \\
106 \div 371 = 0 \text{ R} 106 \\
\end{array}
\]

Step 2  Divide the remainder into the divisor. Repeat this step until you get a remainder of 0.

Step 3  The last divisor is the GCF of the two original numbers. The GCF of 848 and 1,325 is 53.

Use the method above to find the GCF for each pair of numbers.

1. 187; 578
2. 161; 943
3. 215; 1,849
4. 453; 484
5. 432; 588
6. 279; 403
7. 1,325; 3,498
8. 9,840; 1,751
9. 3,484; 5,963
10. 1,802; 106
11. 45,787; 69,875
12. 35,811; 102,070
### Enrich

#### GCFs by Successive Division

Use the method above to find the GCF for each pair of numbers.  **Answers**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> 187; 578</td>
<td><strong>2.</strong> 161; 943</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td><strong>3.</strong> 215; 1,849</td>
<td><strong>4.</strong> 453; 484</td>
<td></td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>1</td>
</tr>
<tr>
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<td><strong>6.</strong> 279; 403</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>31</td>
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</tr>
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<td></td>
<td>37</td>
<td>106</td>
</tr>
<tr>
<td><strong>11.</strong> 45,787; 69,875</td>
<td><strong>12.</strong> 35,811; 102,07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>173</td>
</tr>
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</table>
Lesson 4 Homework Practice

Ratio Tables

For Exercises 1–3, use the ratio tables given to solve each problem.

1. CAMPING To disinfect 1 quart of stream water to make it drinkable, you need to add 2 tablets of iodine. How many tablets do you need to disinfect 4 quarts?

2. BOOKS A book store bought 160 copies of a book from the publisher for $4,000. If the store gives away 2 books, how much money will it lose?

3. SALARY Luz earns $400 for 40 hours of work. Use a ratio table to determine how much she earns for 6 hours of work.

4. DISTANCE If 10 miles is about 16 kilometers and the distance between two towns is 45 miles, use a ratio table to find the distance between the towns in kilometers. Explain your reasoning.

RECIPES For Exercises 6–8, use the following information.

A soup that serves 16 people calls for 2 cans of chopped clams, 4 cups of chicken broth, 6 cups of milk, and 4 cups of cubed potatoes.

6. Create a ratio table to represent this situation.

7. How much of each ingredient would you need to make an identical recipe that serves 8 people? 32 people?

8. How much of each ingredient would you need to make an identical recipe that serves 24 people? Explain your reasoning.
Lesson 4 Homework Practice

**Ratio Tables Answers**

For Exercises 1–3, use the ratio tables given to solve each problem.

1. **CAMPING** To disinfect 1 quart of stream water to make it drinkable, you need to add 2 tablets of iodine. How many tablets do you need to disinfect 4 quarts?

   (Rule: divide the number of tablets by 2) 8 tablets

2. **BOOKS** A book store bought 160 copies of a book from the publisher for $4,000. If the store gives away 2 books, how much money will it lose?

   (Rule: divide cost by 25) $50

3. **SALARY** Luz earns $400 for 40 hours of work. Use a ratio table to determine how much she earns for 6 hours of work.

   $60

<table>
<thead>
<tr>
<th>Salary</th>
<th>40</th>
<th>10</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>40</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

4. **DISTANCE** If 10 miles is about 16 kilometers and the distance between two towns is 45 miles, use a ratio table to find the distance between the towns in kilometers.

   Explain your reasoning.

   72 km; If 10 miles is about 16km, 90 miles is about 144 km. Since 45 miles is half of 90 miles, or 90 ÷ 2, the distance in km must also be half, or 144 ÷ 2.

5. **RECIPES** For Exercises 6–8, use the following information.

   A soup that serves 16 people calls for 2 cans of chopped clams, 4 cups of chicken broth, 6 cups of milk, and 4 cups of cubed potatoes.

   6. Create a ratio table to represent this situation.

<table>
<thead>
<tr>
<th>People Served</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chopped Clams (cans)</td>
<td>2</td>
</tr>
<tr>
<td>Chicken Broth (cups)</td>
<td>4</td>
</tr>
<tr>
<td>Milk (cups)</td>
<td>6</td>
</tr>
<tr>
<td>Cubed Potatoes (cups)</td>
<td>4</td>
</tr>
</tbody>
</table>

   7. How much of each ingredient would you need to make an identical recipe that serves 8 people? 32 people?

   8 people: 1 can clams, 2 cups broth, 3 cups milk, 2 cups potatoes; 32 people: 4 cans clams, 8 cups broth, 12 cups milk, 8 cups potatoes

   8. How much of each ingredient would you need to make an identical recipe that serves 24 people? Explain your reasoning.

   24 people: 3 cans clams, 6 cups broth, 9 cups milk, 6 cups potatoes; Since 24 is three times 8, multiply the ingredients for 8 servings by three.
Lesson 7 Homework Practice

Ratio and Rate Problems

Solve.

1. **MAMMALS** A pronghorn antelope can travel 105 miles in 3 hours. If it continued traveling at the same speed, how far could a pronghorn travel in 11 hours?

2. **BIKES** Out of 32 students in a class, 5 said they ride their bikes to school. Based on these results, how many of the 800 students in the school ride their bikes to school?

3. **MEAT** Hamburger sells for 3 pounds for $6. If Samantha buys 10 pounds of hamburger, how much will she pay?

4. **FOOD** If 24 extra large cans of soup will serve 96 people, how many cans should Ann buy to serve 28 people?

5. **BIRDS** The ruby-throated hummingbird has a wing beat of about 200 beats per second. About how many wing beats would a hummingbird have in 3 minutes?

Use the table to answer questions 6–9. The table shows the vehicles that passed Luann on the highway.

6. At this rate, how many minivans would pass Luann if 60 vehicles passed her?

7. At this rate, how many trucks would pass Luann if 90 vehicles passed her?

8. If 150 vehicles passed Luann, how many more minivans than cars would you expect to pass her? Assume the rate continues.

9. Luann predicted that if a certain number of vehicles passed her by, 42 of them would be SUVs. What was that certain number of vehicles she had in mind?
Lesson 7 Homework Practice

Ratio and Rate Problems

Solve.

1. **MAMMALS** A pronghorn antelope can travel 105 miles in 3 hours. If it continued traveling at the same speed, how far could a pronghorn travel in 11 hours?

   \[
   105 \div 3 = 35 \text{ mph; } 35 \times 11 = 385 \text{ miles}
   \]

2. **BIKES** Out of 32 students in a class, 5 said they ride their bikes to school. Based on these results, how many of the 800 students in the school ride their bikes to school?

   \[
   \frac{5}{32} = \frac{x}{800}; 32 \times 25 = 800 \text{ so } x = 125 \text{ students}
   \]

3. **MEAT** Hamburger sells for 3 pounds for $6. If Samantha buys 10 pounds of hamburger, how much will she pay?

   \[
   \frac{6}{3} \text{ lb} = \frac{2}{1} \text{ per pound so } 10 \times 2 = 20 \text{ paid}
   \]

4. **FOOD** If 24 extra large cans of soup will serve 96 people, how many cans should Ann buy to serve 28 people?

   \[
   \frac{96}{24} = 4 \text{ people per can so } \frac{28}{4} = 7 \text{ cans}
   \]

5. **BIRDS** The ruby-throated hummingbird has a wing beat of about 200 beats per second. About how many wing beats would a hummingbird have in 3 minutes?

   \[
   200 \times (60 \text{ seconds} \times 3 \text{ mins}) = 200 \times 180 = 36,000 \text{ beats}
   \]

Use the table to answer questions 6–9. The table shows the vehicles that passed Luann on the highway.

<table>
<thead>
<tr>
<th>Types of Vehicles</th>
<th>Number of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>6</td>
</tr>
<tr>
<td>Truck</td>
<td>10</td>
</tr>
<tr>
<td>SUV</td>
<td>14</td>
</tr>
<tr>
<td>Minivan</td>
<td>15</td>
</tr>
</tbody>
</table>

6. At this rate, how many minivans would pass Luann if 60 vehicles passed her?

   \[
   \frac{45}{15} = 3 \text{ cars per 1 minivan (rate); } \frac{60}{3} = 20 \text{ minivans}
   \]

7. At this rate, how many trucks would pass Luann if 90 vehicles passed her?

   \[
   \frac{45}{10} = 4.5 \text{ cars per truck (rate); } \frac{90}{4.5} = 20 \text{ trucks}
   \]

8. If 150 vehicles passed Luann, how many more minivans than cars would you expect to pass her? Assume the rate continues.

   Minivan rate: 3; \(45 \div 6 = 7.5 \text{ car rate; } \frac{150}{3} = 30 \text{ minivans; } \frac{150}{7.5} = 20 \text{ cars; about ten more minivans}

9. Luann predicted that if a certain number of vehicles passed her by, 42 of them would be SUVs. What was that certain number of vehicles she had in mind?

   \[
   \frac{14}{45} = \frac{x}{42}; 14 \times 3 = 42 \text{ so } 45 \times 3 = 135 \text{ total vehicles}
   \]