

# What Is a Ratio?

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

A **ratio** compares two amounts. If a fruit bowl has 4 apples and 6 oranges, the ratio of apples to oranges is 4 : 6. You can write a ratio three ways: with a colon 4 : 6, with the word “to” (4 to 6), or as a fraction  $\frac{4}{6}$ . To put a ratio in **simplest form**, divide both numbers by their greatest common factor — just like reducing a fraction. So 4 : 6 becomes 2 : 3. **Order matters**: 2 : 3 is not the same as 3 : 2, so always read carefully which amount comes first.

◇ **Example:** Write the ratio of 6 to 9 in simplest form.

⇒ Start with the ratio 6 : 9. Now ask: what is the biggest number that divides into both 6 and 9 evenly? Both are divisible by 3, so 3 is our greatest common factor. Divide each part by 3:  $6 \div 3 = 2$  and  $9 \div 3 = 3$ . That gives us 2 : 3. We can check by scaling back up —  $2 \times 3 = 6$  and  $3 \times 3 = 9$ , so it matches the original.

**Answer:** 2 : 3

## PRACTICE

Write each ratio in simplest form.

- |                       |       |                       |       |
|-----------------------|-------|-----------------------|-------|
| 1. Ratio of 6 to 9    | _____ | 11. Ratio of 18 to 30 | _____ |
| 2. Ratio of 4 to 8    | _____ | 12. Ratio of 24 to 36 | _____ |
| 3. Ratio of 10 to 15  | _____ | 13. Ratio of 21 to 28 | _____ |
| 4. Ratio of 12 to 18  | _____ | 14. Ratio of 30 to 45 | _____ |
| 5. Ratio of 9 to 12   | _____ | 15. Ratio of 27 to 36 | _____ |
| 6. Ratio of 8 to 20   | _____ | 16. Ratio of 40 to 16 | _____ |
| 7. Ratio of 14 to 21  | _____ | 17. Ratio of 35 to 14 | _____ |
| 8. Ratio of 25 to 35  | _____ | 18. Ratio of 48 to 60 | _____ |
| 9. Ratio of 16 to 24  | _____ | 19. Ratio of 45 to 27 | _____ |
| 10. Ratio of 15 to 40 | _____ | 20. Ratio of 28 to 49 | _____ |

## ◆ Word Problems

21. A classroom has 12 boys and 18 girls. Write the ratio of boys to girls in simplest form. \_\_\_\_\_
22. A smoothie recipe uses 8 strawberries and 20 blueberries. Write the ratio of strawberries to blueberries in simplest form. \_\_\_\_\_
23. A parking lot has 24 cars and 36 trucks. Write the ratio of cars to trucks in simplest form. \_\_\_\_\_
24. A box of crayons has 15 warm colors and 40 cool colors. Write the ratio of warm colors to cool colors in simplest form. \_\_\_\_\_



## Answer Keys

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|--|--|
| 1. <input type="text" value="2 : 3"/>  | 13. <input type="text" value="3 : 4"/> |
| 2. <input type="text" value="1 : 2"/>  | 14. <input type="text" value="2 : 3"/> |
| 3. <input type="text" value="2 : 3"/>  | 15. <input type="text" value="3 : 4"/> |
| 4. <input type="text" value="2 : 3"/>  | 16. <input type="text" value="5 : 2"/> |
| 5. <input type="text" value="3 : 4"/>  | 17. <input type="text" value="5 : 2"/> |
| 6. <input type="text" value="2 : 5"/>  | 18. <input type="text" value="4 : 5"/> |
| 7. <input type="text" value="2 : 3"/>  | 19. <input type="text" value="5 : 3"/> |
| 8. <input type="text" value="5 : 7"/>  | 20. <input type="text" value="4 : 7"/> |
| 9. <input type="text" value="2 : 3"/>  | 21. <input type="text" value="2 : 3"/> |
| 10. <input type="text" value="3 : 8"/> | 22. <input type="text" value="2 : 5"/> |
| 11. <input type="text" value="3 : 5"/> | 23. <input type="text" value="2 : 3"/> |
| 12. <input type="text" value="2 : 3"/> | 24. <input type="text" value="3 : 8"/> |

### Step-by-Step Explanations

- |   |   |
|---|---|
| <p>1. Both 6 and 9 divide by 3, giving 2 : 3.</p> <p>2. Divide both by 4: <math>4 \div 4 = 1</math> and <math>8 \div 4 = 2</math>, so 1 : 2.</p> <p>3. The greatest common factor of 10 and 15 is 5, giving 2 : 3.</p> <p>4. Both divide by 6: <math>12 \div 6 = 2</math> and <math>18 \div 6 = 3</math>.</p> <p>5. Divide both by 3 to get 3 : 4.</p> <p>6. The greatest common factor is 4, so 8 : 20 becomes 2 : 5.</p> <p>7. Both share the factor 7, giving 2 : 3.</p> <p>8. Divide both by 5: <math>25 \div 5 = 5</math> and <math>35 \div 5 = 7</math>.</p> <p>9. The greatest common factor of 16 and 24 is 8, giving 2 : 3.</p> <p>10. Both divide by 5: <math>15 \div 5 = 3</math> and <math>40 \div 5 = 8</math>.</p> <p>11. The greatest common factor is 6, so 18 : 30 becomes 3 : 5.</p> <p>12. Divide both by 12 to get 2 : 3.</p> <p>13. Both share the factor 7, giving 3 : 4.</p> <p>14. The greatest common factor of 30 and 45 is 15, giving 2 : 3.</p> | <p>15. Both divide by 9: <math>27 \div 9 = 3</math> and <math>36 \div 9 = 4</math>.</p> <p>16. The greatest common factor is 8, so 40 : 16 becomes 5 : 2. Order matters — 40 comes first.</p> <p>17. Both share the factor 7: <math>35 \div 7 = 5</math> and <math>14 \div 7 = 2</math>.</p> <p>18. The greatest common factor of 48 and 60 is 12, giving 4 : 5.</p> <p>19. Both divide by 9: <math>45 \div 9 = 5</math> and <math>27 \div 9 = 3</math>.</p> <p>20. Both share the factor 7: <math>28 \div 7 = 4</math> and <math>49 \div 7 = 7</math>.</p> <p>21. The ratio of boys to girls is 12 : 18. Both numbers divide by 6, so <math>12 \div 6 = 2</math> and <math>18 \div 6 = 3</math>, giving 2 : 3.</p> <p>22. Start with 8 : 20. The greatest common factor of 8 and 20 is 4, so divide both by 4 to get 2 : 5.</p> <p>23. The ratio is 24 : 36. Both divide by 12, so <math>24 \div 12 = 2</math> and <math>36 \div 12 = 3</math>, giving 2 : 3.</p> <p>24. Start with 15 : 40. Both numbers divide by 5, so <math>15 \div 5 = 3</math> and <math>40 \div 5 = 8</math>, giving 3 : 8.</p> |
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