

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.

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|-----------------------|-------|-----------------------|-------|
| 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

- | | |
|-------------|-------------|
| 1. $2 : 3$ | 13. $3 : 4$ |
| 2. $1 : 2$ | 14. $2 : 3$ |
| 3. $2 : 3$ | 15. $3 : 4$ |
| 4. $2 : 3$ | 16. $5 : 2$ |
| 5. $3 : 4$ | 17. $5 : 2$ |
| 6. $2 : 5$ | 18. $4 : 5$ |
| 7. $2 : 3$ | 19. $5 : 3$ |
| 8. $5 : 7$ | 20. $4 : 7$ |
| 9. $2 : 3$ | 21. $2 : 3$ |
| 10. $3 : 8$ | 22. $2 : 5$ |
| 11. $3 : 5$ | 23. $2 : 3$ |
| 12. $2 : 3$ | 24. $3 : 8$ |

Step-by-Step Explanations

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| <p>1. Both 6 and 9 divide by 3, giving $2 : 3$.</p> <p>2. Divide both by 4: $4 \div 4 = 1$ and $8 \div 4 = 2$, 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: $12 \div 6 = 2$ and $18 \div 6 = 3$.</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: $25 \div 5 = 5$ and $35 \div 5 = 7$.</p> <p>9. The greatest common factor of 16 and 24 is 8, giving $2 : 3$.</p> <p>10. Both divide by 5: $15 \div 5 = 3$ and $40 \div 5 = 8$.</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: $27 \div 9 = 3$ and $36 \div 9 = 4$.</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: $35 \div 7 = 5$ and $14 \div 7 = 2$.</p> <p>18. The greatest common factor of 48 and 60 is 12, giving $4 : 5$.</p> <p>19. Both divide by 9: $45 \div 9 = 5$ and $27 \div 9 = 3$.</p> <p>20. Both share the factor 7: $28 \div 7 = 4$ and $49 \div 7 = 7$.</p> <p>21. The ratio of boys to girls is $12 : 18$. Both numbers divide by 6, so $12 \div 6 = 2$ and $18 \div 6 = 3$, 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 $24 \div 12 = 2$ and $36 \div 12 = 3$, giving $2 : 3$.</p> <p>24. Start with $15 : 40$. Both numbers divide by 5, so $15 \div 5 = 3$ and $40 \div 5 = 8$, giving $3 : 8$.</p> |
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