

Writing Ratios in Different Forms

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

A **ratio** compares two quantities. If a basket holds 8 red apples and 12 green apples, the ratio of red to green is 8 : 12. You can write any ratio three ways: with a colon (8 : 12), with the word “to” (8 to 12), or as a fraction $\frac{8}{12}$. To write a ratio in **simplest form**, divide both numbers by their **greatest common factor**, exactly like reducing a fraction. So 8 : 12 becomes 2 : 3. **Order matters** — 2 : 3 is not the same as 3 : 2, so always notice which quantity is named first.

◇ **Example:** Write the ratio of 8 to 12 in simplest form.

⇒ Begin with the ratio 8 : 12. Now ask yourself: what is the biggest number that divides evenly into both 8 and 12? Both share the factor 4, so 4 is the greatest common factor. Divide each part by 4: $8 \div 4 = 2$ and $12 \div 4 = 3$. That leaves us with 2 : 3. To check, scale back up: $2 \times 4 = 8$ and $3 \times 4 = 12$ — it matches, so we are done.

Answer: 2 : 3

PRACTICE

Write each ratio in simplest form.

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|-----------------------|-------|-----------------------|-------|
| 1. Ratio of 8 to 12 | _____ | 11. Ratio of 24 to 30 | _____ |
| 2. Ratio of 6 to 10 | _____ | 12. Ratio of 21 to 49 | _____ |
| 3. Ratio of 9 to 15 | _____ | 13. Ratio of 27 to 45 | _____ |
| 4. Ratio of 14 to 21 | _____ | 14. Ratio of 30 to 42 | _____ |
| 5. Ratio of 10 to 25 | _____ | 15. Ratio of 36 to 48 | _____ |
| 6. Ratio of 12 to 16 | _____ | 16. Ratio of 35 to 20 | _____ |
| 7. Ratio of 20 to 8 | _____ | 17. Ratio of 28 to 42 | _____ |
| 8. Ratio of 18 to 24 | _____ | 18. Ratio of 45 to 54 | _____ |
| 9. Ratio of 16 to 40 | _____ | 19. Ratio of 33 to 22 | _____ |
| 10. Ratio of 15 to 35 | _____ | 20. Ratio of 40 to 64 | _____ |

◆ Word Problems

21. A parking lot has 15 cars and 25 trucks. Write the ratio of cars to trucks in simplest form. _____
22. A bracelet uses 18 blue beads and 12 silver beads. Write the ratio of silver beads to blue beads in simplest form. _____
23. In a choir there are 16 sixth graders and 24 seventh graders. Write the ratio of sixth graders to seventh graders in simplest form. _____
24. A trail mix has 30 raisins and 42 peanuts. Write the ratio of raisins to peanuts in simplest form. _____



Answer Keys

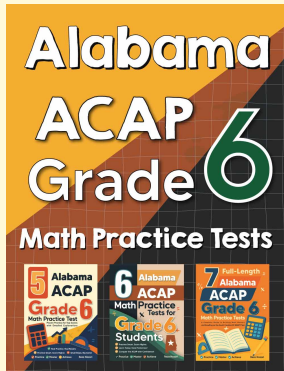
- | | |
|-------------|-------------|
| 1. $2 : 3$ | 13. $3 : 5$ |
| 2. $3 : 5$ | 14. $5 : 7$ |
| 3. $3 : 5$ | 15. $3 : 4$ |
| 4. $2 : 3$ | 16. $7 : 4$ |
| 5. $2 : 5$ | 17. $2 : 3$ |
| 6. $3 : 4$ | 18. $5 : 6$ |
| 7. $5 : 2$ | 19. $3 : 2$ |
| 8. $3 : 4$ | 20. $5 : 8$ |
| 9. $2 : 5$ | 21. $3 : 5$ |
|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

Step-by-Step Explanations

- | | |
|---|---|
| <p>1. Both 8 and 12 divide by 4, giving $2 : 3$.</p> <p>2. Divide both by 2: $6 \div 2 = 3$ and $10 \div 2 = 5$, so $3 : 5$.</p> <p>3. The greatest common factor of 9 and 15 is 3, giving $3 : 5$.</p> <p>4. Both share the factor 7: $14 \div 7 = 2$ and $21 \div 7 = 3$.</p> <p>5. Divide both by 5 to get $2 : 5$.</p> <p>6. The greatest common factor is 4, so $12 : 16$ becomes $3 : 4$.</p> <p>7. Both divide by 4: $20 \div 4 = 5$ and $8 \div 4 = 2$. Order matters — 20 is named first.</p> <p>8. The greatest common factor of 18 and 24 is 6, giving $3 : 4$.</p> <p>9. Divide both by 8: $16 \div 8 = 2$ and $40 \div 8 = 5$.</p> <p>10. Both share the factor 5, so $15 : 35$ becomes $3 : 7$.</p> <p>11. The greatest common factor is 6: $24 \div 6 = 4$ and $30 \div 6 = 5$.</p> <p>12. Both divide by 7, giving $3 : 7$.</p> <p>13. The greatest common factor of 27 and 45 is 9, giving $3 : 5$.</p> | <p>14. Both share the factor 6: $30 \div 6 = 5$ and $42 \div 6 = 7$.</p> <p>15. The greatest common factor is 12, so $36 : 48$ becomes $3 : 4$.</p> <p>16. Both divide by 5: $35 \div 5 = 7$ and $20 \div 5 = 4$.</p> <p>17. The greatest common factor of 28 and 42 is 14, giving $2 : 3$.</p> <p>18. Both share the factor 9: $45 \div 9 = 5$ and $54 \div 9 = 6$.</p> <p>19. Both divide by 11: $33 \div 11 = 3$ and $22 \div 11 = 2$.</p> <p>20. The greatest common factor of 40 and 64 is 8, giving $5 : 8$.</p> <p>21. The ratio of cars to trucks is $15 : 25$. Both numbers divide by 5, so $15 \div 5 = 3$ and $25 \div 5 = 5$, giving $3 : 5$.</p> <p>22. Silver comes first, so the ratio is $12 : 18$. The greatest common factor is 6: $12 \div 6 = 2$ and $18 \div 6 = 3$, so $2 : 3$.</p> <p>23. The ratio is $16 : 24$. Both divide by 8, giving $16 \div 8 = 2$ and $24 \div 8 = 3$, so $2 : 3$.</p> <p>24. The ratio of raisins to peanuts is $30 : 42$. The greatest common factor is 6: $30 \div 6 = 5$ and $42 \div 6 = 7$, giving $5 : 7$.</p> |
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