

## 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.

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

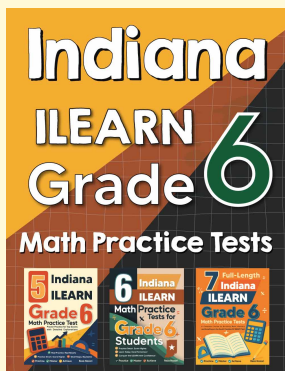
- |             |             |
|-------------|-------------|
| 1. $2 : 3$  | 13. $3 : 5$ |
| 2. $3 : 5$  | 14. $5 : 7$ |
| 3. $3 : 5$  | 15. $3 : 4$ |
| 4. $2 : 3$  | 16. $7 : 4$ |
| 5. $2 : 5$  | 17. $2 : 3$ |
| 6. $3 : 4$  | 18. $5 : 6$ |
| 7. $5 : 2$  | 19. $3 : 2$ |
| 8. $3 : 4$  | 20. $5 : 8$ |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