Writing Ratios in Different Forms

Name: _____	Date: _____	Score: _____ / 24

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 _____

2. Ratio of 6 to 10 _____

3. Ratio of 9 to 15 _____

4. Ratio of 14 to 21 _____

5. Ratio of 10 to 25 _____

6. Ratio of 12 to 16 _____

7. Ratio of 20 to 8 _____

8. Ratio of 18 to 24 _____

9. Ratio of 16 to 40 _____

10. Ratio of 15 to 35 _____

11. Ratio of 24 to 30 _____

12. Ratio of 21 to 49 _____

13. Ratio of 27 to 45 _____

14. Ratio of 30 to 42 _____

15. Ratio of 36 to 48 _____

16. Ratio of 35 to 20 _____

17. Ratio of 28 to 42 _____

18. Ratio of 45 to 54 _____

19. Ratio of 33 to 22 _____

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

Step-by-Step Explanations

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

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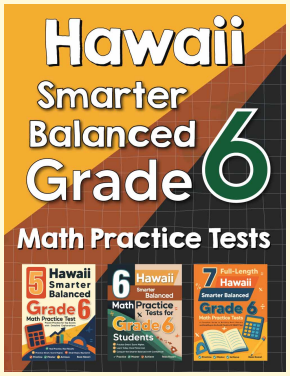

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