Simplifying Fractions

Name: _____	Date: _____	Score: _____ / 24

Quick Review

A fraction is in **simplest form** when the numerator and denominator share no common factor other than 1. To simplify, find the **greatest common factor (GCF)** of the top and bottom, then divide both by it. For $\frac{6}{8}$, the GCF is 2, so $\frac{6}{8} = \frac{3}{4}$. If you cannot spot the GCF right away, you can divide by any common factor and repeat until nothing else divides evenly. The value of the fraction never changes — it just looks tidier.

◇ **Example:** Write $\frac{6}{8}$ in simplest form.

⇒ Look for the largest number that divides evenly into both 6 and 8. Both share the factor 2, and that is the greatest common factor here. Divide the top and bottom by 2: $6 \div 2 = 3$ and $8 \div 2 = 4$. That gives $\frac{3}{4}$. Since 3 and 4 have no common factor left, the fraction is fully simplified.

Answer: $\frac{3}{4}$

PRACTICE

Write each fraction in simplest form.

1. $\frac{6}{8}$ _____
2. $\frac{10}{15}$ _____
3. $\frac{12}{18}$ _____
4. $\frac{8}{20}$ _____
5. $\frac{9}{24}$ _____
6. $\frac{14}{21}$ _____
7. $\frac{16}{40}$ _____
8. $\frac{15}{25}$ _____
9. $\frac{18}{30}$ _____
10. $\frac{24}{36}$ _____
11. $\frac{20}{50}$ _____
12. $\frac{27}{45}$ _____
13. $\frac{21}{28}$ _____
14. $\frac{30}{48}$ _____
15. $\frac{35}{49}$ _____
16. $\frac{16}{24}$ _____
17. $\frac{28}{42}$ _____
18. $\frac{45}{60}$ _____
19. $\frac{33}{44}$ _____
20. $\frac{40}{72}$ _____

Word Problems

21. A pizza is cut into 12 slices and 8 slices are eaten. Write the fraction eaten in simplest form. _____
22. A class has 30 students and 18 of them ride the bus. Write the fraction who ride the bus in simplest form. _____
23. A jar holds 40 marbles and 24 of them are blue. Write the fraction that are blue in simplest form. _____
24. A book has 45 pages and Sam has read 27 of them. Write the fraction Sam has read in simplest form. _____

Answer Keys

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

Step-by-Step Explanations

1. The GCF of 6 and 8 is 2: $6 \div 2 = 3$, $8 \div 2 = 4$.
2. The GCF is 5: $10 \div 5 = 2$, $15 \div 5 = 3$.
3. The GCF of 12 and 18 is 6, giving $\frac{2}{3}$.
4. The GCF is 4: $8 \div 4 = 2$, $20 \div 4 = 5$.
5. The GCF of 9 and 24 is 3: $9 \div 3 = 3$, $24 \div 3 = 8$.
6. The GCF is 7: $14 \div 7 = 2$, $21 \div 7 = 3$.
7. The GCF of 16 and 40 is 8, giving $\frac{2}{5}$.
8. The GCF is 5: $15 \div 5 = 3$, $25 \div 5 = 5$.
9. The GCF of 18 and 30 is 6, giving $\frac{3}{5}$.
10. The GCF is 12: $24 \div 12 = 2$, $36 \div 12 = 3$.
11. The GCF of 20 and 50 is 10, giving $\frac{2}{5}$.
12. The GCF is 9: $27 \div 9 = 3$, $45 \div 9 = 5$.
13. The GCF of 21 and 28 is 7, giving $\frac{3}{4}$.
14. The GCF is 6: $30 \div 6 = 5$, $48 \div 6 = 8$.
15. The GCF of 35 and 49 is 7, giving $\frac{5}{7}$.
16. The GCF is 8: $16 \div 8 = 2$, $24 \div 8 = 3$.
17. The GCF of 28 and 42 is 14, giving $\frac{2}{3}$.
18. The GCF is 15: $45 \div 15 = 3$, $60 \div 15 = 4$.
19. The GCF of 33 and 44 is 11, giving $\frac{3}{4}$.
20. The GCF is 8: $40 \div 8 = 5$, $72 \div 8 = 9$.
21. The fraction eaten is $\frac{8}{12}$. The GCF of 8 and 12 is 4, so it simplifies to $\frac{2}{3}$.
22. The fraction is $\frac{18}{30}$. The GCF of 18 and 30 is 6, so it simplifies to $\frac{3}{5}$.
23. The fraction is $\frac{24}{40}$. The GCF of 24 and 40 is 8, so it simplifies to $\frac{3}{5}$.
24. The fraction is $\frac{27}{45}$. The GCF of 27 and 45 is 9, so it simplifies to $\frac{3}{5}$.

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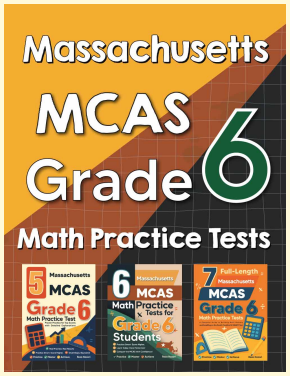

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