

# Simplifying Fractions

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

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

### ◆ Word Problems

- A pizza is cut into 12 slices and 8 slices are eaten. Write the fraction eaten in simplest form. \_\_\_\_\_
- A class has 30 students and 18 of them ride the bus. Write the fraction who ride the bus in simplest form. \_\_\_\_\_
- A jar holds 40 marbles and 24 of them are blue. Write the fraction that are blue in simplest form. \_\_\_\_\_
- 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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