

# Simplifying Fractions

Name: \_\_\_\_\_

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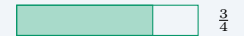
## Quick Review and Helpful Hints

A fraction is in **lowest terms** when its numerator and denominator share no common factor except 1. To simplify: find the **Greatest Common Factor (GCF)** of the top and bottom, then divide both by it. You can also cancel common factors a few at a time and reach the same result.

**Q Example:** Simplify  $\frac{18}{24}$ .

**Work:** The GCF of 18 and 24 is 6. Divide top and bottom by 6 to get  $\frac{3}{4}$ .

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

 $\frac{18}{24}$  $\frac{3}{4}$ 

Same amount shaded:  $\frac{18}{24} = \frac{3}{4}$ .

## Practice Problems

Write each fraction in its lowest terms.

1. Simplify  $\frac{8}{12}$ . \_\_\_\_\_

2. Simplify  $\frac{15}{20}$ . \_\_\_\_\_

3. Simplify  $\frac{9}{27}$ . \_\_\_\_\_

4. Simplify  $\frac{24}{36}$ . \_\_\_\_\_

5. Simplify  $\frac{18}{45}$ . \_\_\_\_\_

6. Simplify  $\frac{30}{48}$ . \_\_\_\_\_

7. Simplify  $\frac{12}{16}$ . \_\_\_\_\_

8. Simplify  $\frac{45}{60}$ . \_\_\_\_\_

9. Simplify  $\frac{21}{56}$ . \_\_\_\_\_

10. Simplify  $\frac{16}{40}$ . \_\_\_\_\_

11. Simplify  $\frac{27}{36}$ . \_\_\_\_\_

12. Simplify  $\frac{50}{75}$ . \_\_\_\_\_

13. Simplify  $\frac{14}{35}$ . \_\_\_\_\_

14. Simplify  $\frac{42}{56}$ . \_\_\_\_\_

## Word Problems

15. A class of 30 students had 24 pass the test. Write the fraction who passed in lowest terms. \_\_\_\_\_

16. A recipe uses 36 ounces of flour from a 54-ounce bag. What fraction of the bag is used? \_\_\_\_\_

17. A student answered 20 of 32 questions correctly. Write that fraction in lowest terms. \_\_\_\_\_

18. Of a 60-minute class, 45 minutes were review. Write that fraction in lowest terms. \_\_\_\_\_



## Answer Keys

1.  $\frac{2}{3}$

2.  $\frac{3}{4}$

3.  $\frac{1}{3}$

4.  $\frac{2}{3}$

5.  $\frac{2}{5}$

6.  $\frac{5}{8}$

7.  $\frac{3}{4}$

8.  $\frac{3}{4}$

9.  $\frac{3}{8}$

10.  $\frac{2}{5}$

11.  $\frac{3}{4}$

12.  $\frac{2}{3}$

13.  $\frac{2}{5}$

14.  $\frac{3}{4}$

15.  $\frac{4}{5}$

16.  $\frac{2}{3}$

17.  $\frac{5}{8}$

18.  $\frac{3}{4}$

### Step-by-Step Explanations

1. Look for the largest number that divides both 8 and 12; the GCF is 4. Dividing top and bottom by 4 leaves  $\frac{2}{3}$ .

2. Both 15 and 20 share the factor 5. Divide each by 5 to reach  $\frac{3}{4}$ .

3. Notice 27 is  $9 \times 3$ , so the GCF is 9. Dividing gives  $\frac{1}{3}$  – whenever the bottom is a multiple of the top, the fraction becomes 1 over something.

4. The greatest common factor of 24 and 36 is 12, so dividing both leaves  $\frac{2}{3}$ . If you only spot a smaller factor like 6 at first, just reduce a second time.

5. Both numbers are divisible by 9:  $18 \div 9 = 2$  and  $45 \div 9 = 5$ , giving  $\frac{2}{5}$ .

6. The largest shared factor of 30 and 48 is 6. Dividing top and bottom gives  $\frac{5}{8}$ .

7. Divide top and bottom by their GCF, 4, to get  $\frac{3}{4}$ .

8. Both 45 and 60 are multiples of 15, so divide by 15 to get  $\frac{3}{4}$ .

9. The factor 7 is common to both numbers:  $21 \div 7 = 3$  and  $56 \div 7 = 8$ , so  $\frac{3}{8}$ .

10. The GCF is 8:  $16 \div 8 = 2$  and  $40 \div 8 = 5$ , giving  $\frac{2}{5}$ .

11. Both divide evenly by 9:  $27 \div 9 = 3$  and  $36 \div 9 = 4$ , so  $\frac{3}{4}$ .

12. Twenty-five divides both:  $50 \div 25 = 2$  and  $75 \div 25 = 3$ , leaving  $\frac{2}{3}$ .

13. The factor 7 appears in both:  $14 \div 7 = 2$  and  $35 \div 7 = 5$ , so  $\frac{2}{5}$ .

14. The GCF of 42 and 56 is 14. Dividing both gives  $\frac{3}{4}$ .

15. Compare the part to the whole: 24 passed out of 30, so  $\frac{24}{30}$ . Divide by 6 to simplify to  $\frac{4}{5}$ .

16. Flour used over the whole bag is  $\frac{36}{54}$ . Both share 18, so it reduces to  $\frac{2}{3}$ .

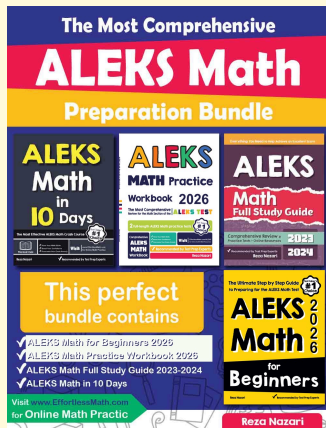
17. Correct answers over total questions is  $\frac{20}{32}$ . Dividing top and bottom by 4 gives  $\frac{5}{8}$ .

18. Review time over class time is  $\frac{45}{60}$ . Both are multiples of 15, so it simplifies to  $\frac{3}{4}$ .



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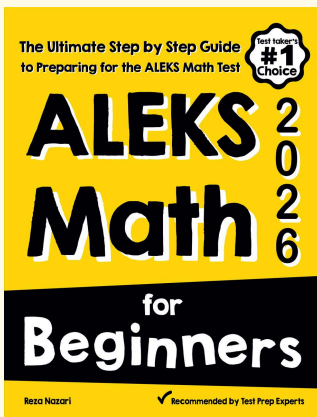
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