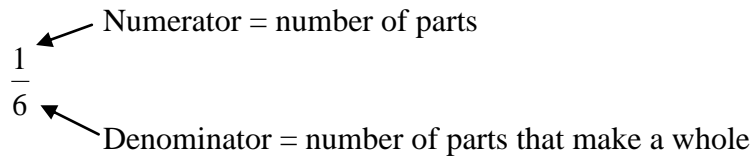


## Fraction Review

A fraction consists of two numbers: a *numerator* (the top number) and a *denominator* (the bottom number).



### Simplifying Fractions

Also called, reducing or writing the fraction in lowest terms

A fraction is simplified if the numerator and denominator have no factors in common other than 1.

To simplify a fraction divide both the numerator and denominator by the *largest number* that will divide evenly into both.

$$\text{Examples: } \frac{18}{30} = \frac{3 \cdot 6}{5 \cdot 6} = \frac{3}{5} \qquad \frac{10xy}{15y} = \frac{2 \cdot 5 \cdot x \cdot y}{3 \cdot 5 \cdot y} = \frac{2x}{3}$$

### Multiplying Fractions

Multiply straight across, numerator times numerator and denominator times denominator. Simplify, if possible.

$$\text{Examples: } \frac{3}{4} \cdot \frac{1}{5} = \frac{3}{20} \qquad \frac{11}{24} \cdot \frac{3y}{5} = \frac{33y}{120} = \frac{11y \cdot 3}{40 \cdot 3} = \frac{11y}{40}$$

### Dividing Fractions

Multiply the first fraction by the reciprocal (flip) of the second fraction.

$$\text{Examples: } \frac{3}{4} \div \frac{1}{5} = \frac{3}{4} \cdot \frac{5}{1} = \frac{15}{4}$$
$$\frac{3y}{4} \div 5y^3 = \frac{3y}{4} \cdot \frac{1}{5y^3} = \frac{3y}{20y^3} = \frac{3 \cdot y}{20y^2 \cdot y} = \frac{3}{20y^2}$$

### Adding or Subtracting Fractions

DENOMINATORS must be the SAME to add or subtract fractions. Get a common denominator, if needed, then add or subtract the numerators and keep the common denominator. Simplify, if possible.

$$\text{Examples: } \frac{3}{4} + \frac{1}{5} = \frac{3 \cdot 5}{4 \cdot 5} + \frac{1 \cdot 4}{5 \cdot 4} = \frac{15}{20} + \frac{4}{20} = \frac{15+4}{20} = \frac{19}{20}$$

$$\frac{7}{8} - \frac{1}{4} = \frac{7}{8} - \frac{1 \cdot 2}{4 \cdot 2} = \frac{7}{8} - \frac{2}{8} = \frac{7-2}{8} = \frac{5}{8}$$

### Practice

Simplify

1.  $\frac{30}{16}$

2.  $-\frac{60}{75}$

Perform the indicated operation and simplify, if needed.

3.  $\frac{1}{7} \cdot \frac{7}{18}$

4.  $\frac{5}{13} \div \frac{15}{26}$

5.  $\frac{11}{14} - \frac{5}{14}$

6.  $200 \cdot \frac{2}{5}$

7.  $\frac{9a}{10} + \frac{2}{5}$

8.  $\frac{2}{3y} - \frac{5}{6y}$

9.  $\frac{1}{7} - \frac{3}{x}$

10.  $-\frac{2}{3} \cdot \frac{8}{15}$

11.  $-\frac{9}{10} \div 5$

12.  $\frac{7}{8} + \frac{1}{20}$

Answers on back

## Practice Answers

1.  $\frac{15}{8}$

2.  $-\frac{4}{5}$

3.  $\frac{1}{18}$

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

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

6. 80

7.  $\frac{9a+4}{10}$

8.  $-\frac{1}{6y}$

9.  $\frac{x-21}{7x}$

10.  $-\frac{16}{45}$

11.  $-\frac{9}{50}$

12.  $\frac{37}{40}$