

Lesson 1-2 Complex Fractions and Unit Rates

Fractions like $\frac{\frac{2}{3}}{\frac{3}{4}}$ are called complex fractions. **Complex fractions** are fractions with a numerator, denominator, or both that are also fractions.

Example 1

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

A fraction can also be written as a division problem.

$$\frac{\frac{2}{3}}{\frac{3}{4}} = 2 \div \frac{3}{4}$$

Write the complex fraction as a division problem.

$$= \frac{2}{1} \times \frac{4}{3}$$

Multiply by the reciprocal of $\frac{3}{4}$, which is $\frac{4}{3}$.

$$= \frac{8}{3} \text{ or } 2\frac{2}{3}$$

Simplify.

So, $\frac{\frac{2}{3}}{\frac{3}{4}}$ is equal to $2\frac{2}{3}$.

Exercises

Simplify.

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

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

3. $\frac{\frac{4}{1}}{\frac{1}{5}}$

4. $\frac{\frac{2}{4}}{\frac{4}{9}}$

5. $\frac{\frac{1}{4}}{\frac{4}{5}}$

6. $\frac{\frac{10}{7}}{\frac{7}{8}}$

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

8. $\frac{\frac{1}{6}}{\frac{5}{6}}$

9. $\frac{\frac{4}{5}}{\frac{9}{10}}$

10. $\frac{\frac{3}{5}}{\frac{3}{10}}$

Lesson 1-2 Complex Fractions and Unit Rates **Skills Practice**

Simplify.

1. $\frac{\frac{1}{2}}{\frac{5}{5}}$

2. $\frac{\frac{4}{5}}{\frac{8}{8}}$

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

4. $\frac{\frac{10}{5}}{\frac{12}{12}}$

7. $\frac{\frac{2}{5}}{\frac{4}{9}}$

8. $\frac{\frac{8}{9}}{\frac{20}{20}}$

9. $\frac{\frac{5}{6}}{\frac{12}{12}}$

10. $\frac{\frac{3}{8}}{\frac{7}{12}}$

13. $\frac{\frac{8}{11}}{\frac{4}{5}}$

14. $\frac{\frac{30}{5}}{\frac{7}{7}}$

15. $\frac{\frac{6}{7}}{\frac{21}{21}}$

16. $\frac{\frac{15}{5}}{\frac{9}{9}}$

17. $\frac{\frac{1}{3}}{\frac{8}{9}}$

18. $\frac{\frac{2}{3}}{\frac{24}{25}}$