

Math 7 - Unit 1b

Day 11 - Complex Fractions

Lesson Objectives:

- I can simplify complex fractions.
- I can write grade-level story contexts involving complex fractions.

If you can walk $\frac{1}{2}$ mile in $\frac{1}{4}$ hour, what is your average speed in miles per hour?

$$\frac{\frac{1}{2} \text{ miles}}{\frac{1}{4} \text{ hours}} = \frac{1}{2} \div \frac{1}{4} = \frac{1}{2} \times \frac{4}{1} = \frac{4}{2} = 2 \text{ mph}$$



Fractions like $\frac{\frac{1}{2}}{\frac{1}{4}}$ are called complex fractions. **Complex fractions** are fractions with a numerator, denominator, or both that are also fractions. Complex fractions are simplified when both the numerator and denominator are integers.

Simplify $\frac{\frac{1}{2}}{\frac{1}{4}}$. $1 \div \frac{1}{2} = 1 \times \frac{2}{1} = 2$

Simplify.

a. $\frac{\frac{2}{3}}{\frac{1}{2}} = \frac{2}{3} \div \frac{1}{2} = \frac{2}{3} \times \frac{2}{1} = \frac{4}{3}$ b. $\frac{\frac{6}{1}}{\frac{1}{3}} = 6 \div \frac{1}{3} = 6 \times \frac{3}{1} = 18$

c. $\frac{\frac{2}{3}}{7} = \frac{2}{3} \div 7 = \frac{2}{3} \times \frac{1}{7} = \frac{2}{21}$ d. $\frac{\frac{4}{2}}{\frac{2}{4}} = 2 \div \frac{2}{4} = 2 \times \frac{4}{2} = 4$

e. $\frac{\frac{1}{5}}{\frac{6}{7}} = \frac{1}{5} \div \frac{6}{7} = \frac{1}{5} \times \frac{7}{6} = \frac{7}{30}$ f. $\frac{\frac{2}{3}}{\frac{3}{4}} = \frac{2}{3} \div \frac{3}{4} = \frac{2}{3} \times \frac{4}{3} = \frac{8}{9}$

Josiah can jog $1\frac{1}{3}$ miles in $\frac{1}{4}$ hour. Find his average speed in miles per hour.

$$\frac{1\frac{1}{3}}{\frac{1}{4}} = 1\frac{1}{3} \div \frac{1}{4} = \frac{4}{3} \div \frac{1}{4} = \frac{4}{3} \times \frac{4}{1} = \frac{16}{3} = 5\frac{1}{3} \text{ mph}$$

Write a story context for $\frac{\frac{2}{3}}{\frac{1}{12}}$.

Homework

Complex Fractions WKS

* Individual Think Time *



What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

