

Fractions Study Guide

Student must be able to

1. Simplify fractions by dividing the numerator and the denominator by a whole number in fraction form. Students need to understand that they need to continue dividing until they cannot divide anymore (go until you can't go no more). To be able to simplify the fraction to the lowest terms the first time, the student should look for the GCF (Greatest common factor) and divide both top and bottom by it.

$$\left\{ \frac{55}{60} \div \frac{5}{5} = \frac{11}{12} \right\} \quad \left\{ \frac{36}{60} \div \frac{6}{6} = \frac{6}{10} \div \frac{2}{2} = \frac{3}{5} \right\}$$

2. Find equivalent fractions. Whenever you are trying to find a fraction that equals another, you just need to remember that you always multiply the top by whatever you multiplied the bottom by, or vice versa.

$$\left\{ \frac{5}{6} \times \frac{5}{5} = \frac{25}{30} \right\} \quad \frac{4}{6} = \times \frac{3}{3} = \frac{12}{18} \quad \left\{ \frac{30}{50} \div \frac{10}{10} = \frac{3}{5} \right\}$$

3. Compare two fractions. Students can do this by making them have the same denominator and then seeing which has more pieces (numerator), or they can just cross multiply and see which one has a larger product.

$$\frac{10}{15} \times \frac{2}{3} = \frac{20}{45} \quad \frac{4}{5} \times \frac{12}{15} = \frac{48}{75}$$

$$\frac{8}{12} \times \frac{2}{3} = \frac{16}{36} \quad \frac{1}{4} \times \frac{3}{12} = \frac{3}{48}$$

4. Order multiple fractions. Students must find a common denominator. Change them all into the same denominator and then ordering the original fractions. Make sure you follow directions, whether greatest to least or least to greatest.

Greatest to Least

$$\frac{3}{5}, \frac{2}{5}, \frac{1}{3}$$

Least to Greatest

$$\frac{1}{3}, \frac{1}{2}, \frac{4}{6}$$

5. Turn a mixed number into an improper fraction. The easier way to do this is to multiply the denominator by the whole number and add the numerator and that turns into your new numerator, you keep the same denominator.

$$3\frac{1}{2} = \frac{7}{2} \quad \left\{ 4\frac{4}{5} = \frac{24}{5} \right\}$$

6. Turn an improper fraction into a mixed number. The easiest way to do this is to divide the numerator (bigger number) by the denominator (smaller number). The answer is your whole number, your remainder is your new numerator and the divisor is the denominator.

$$\left\{ \frac{16}{3} = 5\frac{1}{3} \right\} \quad \left\{ \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2} \right\}$$

7. Recognize the decimal equivalents of certain fractions. $\frac{1}{2} = 0.5$, $\frac{1}{3} = 0.33$, $\frac{1}{4} = 0.25$, $\frac{3}{4} = 0.75$, $\frac{2}{3} = 0.67$, $1 = 1.0$, $\frac{1}{10} = 0.1$, $\frac{1}{100} = 0.01$, $\frac{4}{10} = 0.4$, $\frac{6}{100} = 0.06$

All you have to do is turn any fraction into a fraction with a denominator of 10 or 100.

$$\left\{ \frac{1}{2} \times \frac{5}{5} = \frac{5}{10} = 0.5 \right\} \quad \left\{ 0.63 = \frac{63}{100} \right\} \quad \left\{ \frac{4}{25} \times \frac{4}{4} = \frac{16}{100} = 0.16 \right\}$$