

Reducing Fractions

Reducing a fraction means writing it in *lowest terms*, that is, with the smallest possible numerator and denominator. For instance, 50¢ is $\frac{50}{100}$ of a dollar, or $\frac{1}{2}$ of a dollar. In fact, if you have 50¢ in your pocket, you say that you have half a dollar. Reducing a fraction does not change its value.

Follow these steps to reduce a fraction:

1. Find a whole number that divides *evenly* into both numbers that make up the fraction.
2. Divide that number into the numerator, and replace the numerator with the quotient (the answer you got when you divided).
3. Do the same thing to the denominator.
4. Repeat the first three steps until you can't find a number that divides evenly into both the numerator and the denominator of the fraction.

For example, let's reduce $\frac{8}{24}$. We could do it in two steps $\frac{8 \div 4}{24 \div 4} = \frac{2}{6}$; then $\frac{2 \div 2}{6 \div 2} = \frac{1}{3}$. Or we could do it in a single step $\frac{8 \div 8}{24 \div 8} = \frac{1}{3}$.

Shortcut: When the numerator and denominator both end in zeros, cross out the same number of zeros in both numbers to begin the reducing process. For example, $\frac{300}{4,000}$ reduces to $\frac{3}{40}$ when you cross out two zeros in both numbers. This trick works because you're dividing both numbers by a power of ten, like 10; 100; 1,000; etc.

Whenever you do arithmetic with fractions, reduce your answer. On a multiple-choice test, don't panic if your answer isn't listed. Try to reduce it and then compare it to the choices.

Reduce these fractions to lowest terms:

5. $\frac{3}{12} =$

6. $\frac{14}{35} =$

7. $\frac{24}{42} =$