Another Way to Look at Fractions

Half-notes, quarter notes, eighth notes: they’re the foundation of great music — and great math.

Fractions are everywhere — not just in music, but also in time, recipes, and more. But what exactly are they? Fractions show part of a whole — any whole, whether an entire bar of music, a cake just out of the oven, or a complete day. For example, there are 24 hours in a day: each hour is \( \frac{1}{24} \) of a day.

\( \frac{2}{3} \) of this rectangle is shaded.

\( \frac{2}{3} \) of this glass is full.

The numerator shows how many parts are represented by the fraction. The denominator shows the total number of parts the whole has been divided into.

TRY THIS

After a hard day’s work and an evening with the kids, Ben’s head hits the pillow and he’s out for seven hours. What fraction of a 24-hour day did Ben sleep?

Seven of those 24 hours or \( \frac{7}{24} \) of the day.

1. Georgia is planning a dinner menu for 12 guests. Seven want fish and five want steak. What fraction of the group wants fish? What fraction wants steak?

\( \frac{7}{12} \) of the _____ guests want fish, or \( \frac{5}{12} \) of the _____ guests want steak, or _____

2. Amanda works 11 months out of the year and is laid off 1 month in the summer. What fraction of the year does she work? What fraction of the year is she laid off? (HINT: there are 12 months in a year.)

_____ of the _____ months she works, or _____

_____ of the _____ months she’s laid off, or _____

3. Lee earns $123 a week. He gives $70 to his Mom and keeps $53. What fraction of his salary does he give to Mom? What fraction does he keep?

_____ of _____ he gives to Mom, or _____

_____ of _____ he keeps, or _____
REDUCING FRACTIONS

With fractions, there's more than one way to show the same amount. Take a look at these cakes, which are of equal size but different shapes.

Since there's the same amount of cake in each pan, \( \frac{8}{12} \) must equal \( \frac{2}{3} \). \( \frac{8}{12} \) and \( \frac{2}{3} \) are equivalent fractions — they both have the same value. In fact, \( \frac{2}{3} \) is the reduced form of \( \frac{8}{12} \).

**Fractions** are usually written in reduced form. To reduce fractions follow these steps:

**Step 1:** Think of a number (other than 1) that divides evenly into both the numerator and denominator, and do the division: For the fraction \( \frac{16}{24} \), 4 divides evenly into both 16 & 24. After you divide, you get \( \frac{4}{6} \).

**Step 2:** See if another number can divide evenly into the top and bottom numbers of the new fraction: For \( \frac{4}{6} \), 2 divides evenly into both 4 & 6, and you get \( \frac{2}{3} \).

**Step 3:** When there is no number that divides evenly into both the numerator and denominator of a fraction, that fraction, in this case \( \frac{2}{3} \), is reduced to lowest terms.

**TRY THIS**

1. Can these fractions be reduced? If so, reduce to lowest terms.
   a. \( \frac{3}{9} \)
   b. \( \frac{12}{16} \)
   c. \( \frac{20}{25} \)
   d. \( \frac{7}{34} \)
   e. \( \frac{16}{28} \)

2. Ben works eight hours a day as a mechanic. What fraction of the day does he spend at the garage?

   If necessary, reduce this fraction to lowest terms.

*Did you know?* When you figure out a fraction problem on the GED math test, always reduce your answer to lowest terms.