

Another Way to Look at Fractions

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

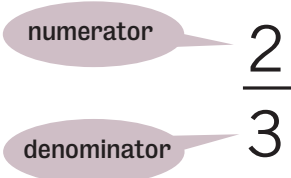
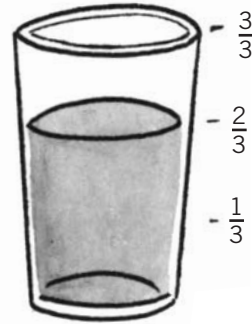


Fractions are everywhere — not just in music, but also in time, recipes, and more. But what exactly are they? Fractions show part of a whole — any whole, whether an entire bar of music, a cake just out of the oven, or a complete day. For example, there are 24 hours in a day: each hour is $\frac{1}{24}$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

_____ of the _____ guests want fish, or _____

_____ 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 _____

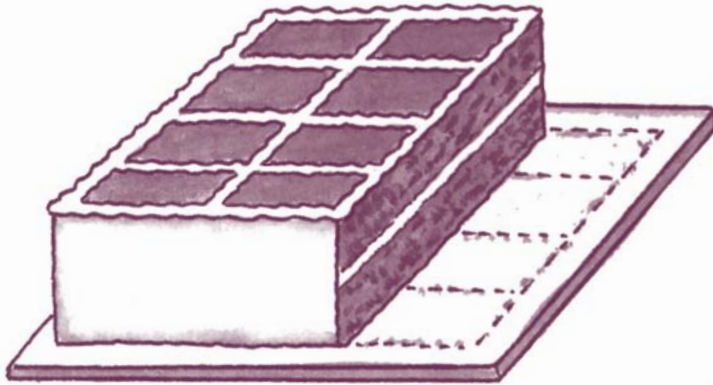
_____ of _____ he keeps, or _____



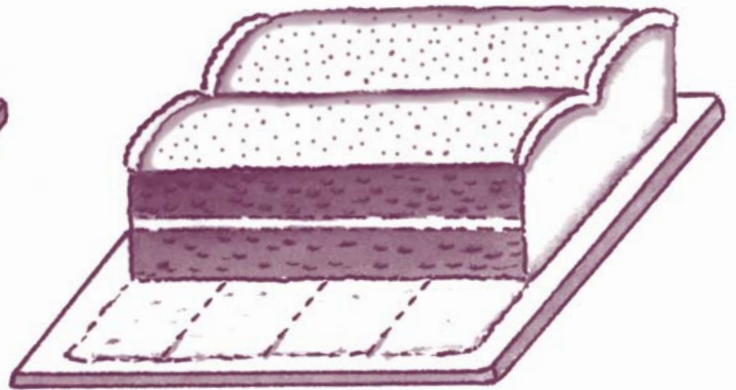
Fractions
Try This: 1. $\frac{7}{12}$, $\frac{5}{12}$
2. $\frac{11}{12}$, $\frac{1}{12}$; 3. $\frac{70}{123}$, $\frac{53}{123}$

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.



This pan is $\frac{8}{12}$ full.



This pan is $\frac{2}{3}$ full.

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.