Fractions that name the same value are called equivalent fractions, such as \( \frac{2}{3} = \frac{6}{9} \).

One method for finding equivalent fractions is to use the Multiplicative Identity (Identity Property of Multiplication), that is, multiplying the given fraction by a form of the number 1 such as \( \frac{2}{2} \), \( \frac{3}{3} \), etc. In this course we call these fractions a “Giant One.” Multiplying by 1 does not change the value of a number.

For additional information, see the Math Notes box in Lesson 3.1.1 of the Core Connections, Course 1 text.

Example 1

Find three equivalent fractions for \( \frac{1}{2} \).

\[
\frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4} \quad \frac{1}{2} \cdot \frac{3}{3} = \frac{3}{6} \quad \frac{1}{2} \cdot \frac{4}{4} = \frac{4}{8}
\]

Example 2

Use the Giant One to find an equivalent fraction to \( \frac{7}{12} \) using 96ths: \( \frac{7}{12} \cdot \frac{8}{8} = \frac{56}{96} \)

Which Giant One do you use?

Since \( \frac{96}{12} = 8 \), the Giant One is \( \frac{8}{8} \):

\[
\frac{7}{12} \cdot \frac{8}{8} = \frac{56}{96}
\]

Problems

Use the Giant One to find the specified equivalent fraction. Your answer should include the Giant One you use and the equivalent numerator.

1. \( \frac{4}{3} \cdot \frac{9}{18} \)
2. \( \frac{5}{9} \cdot \frac{2}{36} \)
3. \( \frac{9}{2} \cdot \frac{2}{38} \)

4. \( \frac{3}{7} \cdot \frac{2}{28} \)
5. \( \frac{5}{3} \cdot \frac{2}{18} \)
6. \( \frac{6}{5} \cdot \frac{2}{15} \)

Answers

1. \( \frac{5}{5} \), 20
2. \( \frac{4}{4} \), 20
3. \( \frac{19}{15} \), 171
4. \( \frac{4}{4} \), 12
5. \( \frac{6}{6} \), 30
6. \( \frac{3}{3} \), 18