

# Section Overview

## Rational Numbers

Lesson 2-1

**Why?** Students must know how to work with rational numbers in order to solve one- and two-step equations.

Write  $\frac{2}{3}$  as a decimal.

$$\begin{array}{r} 0.666 \\ 3 \overline{) 2.0000} \\ \underline{18} \phantom{00} \\ 20 \phantom{00} \\ \underline{18} \phantom{00} \\ 20 \phantom{00} \\ \underline{18} \phantom{00} \\ 20 \phantom{00} \end{array}$$

The pattern repeats.  
This is a repeating decimal.

$\frac{2}{3}$  is equivalent to 0.6.

Write 0.32 as a fraction.

0.32

$$0.32 = \frac{32}{100}$$

2 is in the hundredths place, so write hundredths as the denominator.

$$\frac{32}{100} = \frac{4}{25}$$

Simplify by dividing by the **greatest common divisor**.

$$\frac{8}{25}$$

## Comparing and Ordering Rational Numbers

Lesson 2-2

**Why?** Many quantities and measurements are expressed with rational numbers.

A **rational number** is a number that can be expressed as a *ratio* (fraction) in the form  $\frac{n}{d}$ , where  $n$  and  $d$  are integers and  $d \neq 0$ .

**Examples:**

$$5, \frac{5}{1}, \frac{3}{4}, 1.59, 1\frac{59}{100}, \frac{159}{100}$$

### Comparing Two Fractions with Different Denominators

Compare  $\frac{5}{8}$  and  $\frac{2}{3}$ .

$$\begin{array}{r} 5 \quad 5 \quad 3 \quad 15 \\ 8 \quad 8 \quad 3 \quad 24 \end{array} \qquad \begin{array}{r} 2 \quad 2 \quad 8 \quad 16 \\ 3 \quad 3 \quad 8 \quad 24 \end{array}$$

Write the fractions as **fractions with a common denominator**. Then compare the numerators.

$$\frac{15}{24} < \frac{16}{24}, \text{ so } \frac{5}{8} < \frac{2}{3}.$$

### Comparing Decimals

Compare 0.387 and 0.39.

**0.387**

**0.390**

So,  $0.387 < 0.39$ .

Write the **decimals with the same number of decimal places**. Compare each place from left to right.

