

Lesson 1 Reteach

Terminating and Repeating Decimals

To write a **fraction as a decimal**, divide the numerator by the denominator. Division ends when the remainder is zero.

You can use **bar notation** to indicate that a number pattern repeats indefinitely. A bar is written over the digits that repeat.

Example 1

Write $\frac{3}{20}$ as a decimal.

$$\begin{array}{r} 0.15 \\ 20 \overline{) 3.00} \\ \underline{20} \\ 100 \\ \underline{100} \\ 0 \end{array} \quad \begin{array}{l} \text{Divide 3 by 20.} \\ \\ \text{The remainder is 0.} \end{array}$$

So, $\frac{3}{20} = 0.15$.

Example 2

Write $\frac{5}{9}$ as a decimal.

$$\begin{array}{r} 0.555\dots \\ 9 \overline{) 5.000} \\ \underline{45} \\ 50 \\ \underline{45} \\ 50 \\ \underline{45} \\ 5 \end{array} \quad \begin{array}{l} \leftarrow \text{The remainder after each step is 5.} \\ \leftarrow \\ \leftarrow \end{array}$$

You can use bar notation $0.\overline{5}$ to indicate that 5 repeats forever. So, $\frac{5}{9} = 0.\overline{5}$.

Example 3

Write -0.32 as a fraction in simplest form.

$$\begin{aligned} -0.32 &= -\frac{32}{100} && \text{The 2 is in the hundredths place.} \\ &= -\frac{8}{25} && \text{Simplify.} \end{aligned}$$

Exercises

Write each fraction or mixed number as a decimal. Use bar notation if the decimal is a repeating decimal.

1. $\frac{8}{10}$ **0.8**

2. $-\frac{3}{5}$ **-0.6**

3. $\frac{7}{11}$ **$0.\overline{63}$**

4. $4\frac{7}{8}$ **4.875**

5. $-\frac{13}{15}$ **-0.86**

6. $3\frac{47}{99}$ **3.47**

Write each decimal as a fraction in simplest form.

7. -0.14 **$-\frac{7}{50}$**

8. 0.3 **$\frac{3}{10}$**

9. 0.94 **$\frac{47}{50}$**