

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.

$$\begin{array}{r} 0.15 \\ 20 \overline{)3.00} \\ \underline{20} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

Divide 3 by 20.

The remainder is 0.

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

Example 2

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

$$\begin{array}{r} 0.555\dots \\ 9 \overline{)5.000} \\ \underline{45} \\ 50 \\ \underline{45} \\ 50 \\ \underline{45} \\ 5 \end{array}$$

The remainder after each step is 5.

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.

$$\begin{aligned} -0.32 &= -\frac{32}{100} \\ &= -\frac{8}{25} \end{aligned}$$

The 2 is in the hundredths place.

Simplify.

Exercises

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

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

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

3. $\frac{7}{11}$

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

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

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

Write each decimal as a fraction in simplest form.

7. -0.14

8. 0.3

9. 0.94