

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.

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

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 **$\frac{47}{50}$**

Lesson 1 Skills Practice

Terminating and Repeating Decimals

Write each repeating decimal using bar notation.

1. $0.7353535\ldots$ $0.7\overline{35}$

2. $0.424242\ldots$ $0.\overline{42}$

3. $5.126126126\ldots$ $5.\overline{126}$

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

4. $-\frac{3}{5}$ -0.6

5. $\frac{19}{20}$ 0.95

6. $3\frac{4}{5}$ 3.8

7. $\frac{23}{50}$ 0.46

8. $-1\frac{5}{8}$ -1.625

9. $\frac{19}{25}$ 0.76

10. $4\frac{17}{37}$ $4.\overline{459}$

11. $-5\frac{3}{11}$ $-5.\overline{27}$

12. $\frac{17}{24}$ $0.708\overline{3}$

13. $6\frac{7}{32}$ 6.21875

14. $7\frac{9}{22}$ $7.40\overline{9}$

15. $-1\frac{17}{48}$ $-1.3541\overline{6}$

Write each decimal as a fraction in simplest form.

16. 0.8 $\frac{4}{5}$

17. 0.52 $\frac{13}{25}$

18. -0.92 $-\frac{23}{25}$

19. -0.48 $-\frac{12}{25}$

20. 0.86 $\frac{43}{50}$

21. 0.76 $\frac{19}{25}$