



Name _____ Date _____

Writing Fractions as Decimals

(pages 217–219)

Any fraction can be written as a decimal by using division.

Writing a Fraction as a Decimal	$\frac{4}{5}$ means $4 \div 5$. Divide 4 by 5, and the quotient 0.8 is the decimal you want to find.
Repeating Decimals	Decimals like 0.333333 . . . are called repeating decimals because the digits repeat. Bar notation can be used to indicate that decimals repeat. $0.666666 . . . = 0.\overline{6}$, $0.277777 . . . = 0.2\overline{7}$, $0.737373 . . . = 0.\overline{73}$ Bar notation is useful because some fractions, when written as decimals, are repeating decimals. For example, $\frac{2}{3} = 0.\overline{6}$.

EXAMPLES

Express each fraction as a decimal. Use bar notation for repeating decimals.

A $\frac{1}{5}$

$$\frac{1}{5} = 1 \div 5$$

$$\begin{array}{r} 0.2 \\ 5 \overline{) 1.0} \\ \underline{-10} \\ 0 \end{array}$$

Divide 1 by 5.

Therefore, $\frac{1}{5} = 0.2$.

B $\frac{1}{3}$

$$\frac{1}{3} = 1 \div 3$$

$$\begin{array}{r} 0.33 \\ 3 \overline{) 1.00} \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \end{array}$$

Divide 1 by 3.

This pattern will keep on forever.

$\frac{1}{3}$ is a repeating decimal, $0.\overline{3}$.

Try These Together

Express each fraction or mixed number as a decimal.

1. $\frac{3}{4}$ *HINT: Divide 3 by 4.*

2. $2\frac{1}{2}$ *HINT: The whole number is written to the left of the decimal point.*

PRACTICE

Express each fraction or mixed number as a decimal. Use bar notation to show a repeating decimal.

3. $4\frac{1}{8}$

4. $\frac{1}{6}$

5. $\frac{5}{9}$

6. $\frac{2}{5}$

7. $5\frac{11}{12}$

8. $\frac{8}{11}$

9. $\frac{8}{9}$

10. $6\frac{3}{10}$



11. Standardized Test Practice Express $2\frac{5}{12}$ as a decimal. Use bar notation if necessary.

A 2.4166

B $2.41\overline{6}$

C $2.\overline{146}$

D 2.41666

Answers: 1. 0.75 2. 2.5 3. 4.125 4. 0.16 5. 0.5 6. 0.4 7. 5.916 8. 0.72 9. 0.8 10. 6.3 11. B