

Decimals and Fractions

To express a fraction as a decimal, divide the numerator of the fraction by the denominator.

Example 1 Express $\frac{3}{8}$ as a decimal.

$$\begin{array}{r} 0.375 \\ 8 \overline{)3.000} \end{array} \quad \frac{3}{8} = 0.375$$

A decimal like 0.375 is a terminating decimal. The decimal equivalents for some fractions are repeating decimals rather than terminating decimals. Use a bar to indicate the digits that repeat.

Examples 2 Express $\frac{5}{12}$ as a decimal.

$$\begin{array}{r} 0.41666 \\ 12 \overline{)5.00000} \end{array} = 0.41\overline{6}$$

3 Express $\frac{13}{33}$ as a decimal.

$$\begin{array}{r} 0.393939 \dots \\ 33 \overline{)13.000000} \end{array} = 0.\overline{39}$$

4 Express $5\frac{2}{5}$ as a decimal.

$$\begin{array}{r} 0.4 \\ 5 \overline{)2.0} \end{array} = 0.4 \quad 5\frac{2}{5} = 5.4$$

Express each fraction or mixed number as a decimal. If the decimal is a repeating decimal, use bar notation.

1. $\frac{7}{20}$

2. $\frac{7}{10}$

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

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

5. $\frac{9}{50}$

6. $\frac{1}{99}$

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

8. $\frac{1}{2}$