

## Terminating and Repeating Decimals

Every fraction can be written as a decimal that either terminates or repeats. You can decide if the decimal terminates or repeats by dividing the numerator by the denominator.

Is  $\frac{13}{25}$  a terminating or a repeating decimal?

Divide 13 by 25.

$$\begin{array}{r} 0.52 \\ 25 \overline{)13.00} \\ \underline{-125} \phantom{0} \\ 50 \\ \underline{-50} \\ 0 \end{array} \quad \leftarrow \text{The remainder is zero.}$$

So,  $\frac{13}{25}$  is a terminating decimal.

Is  $\frac{1}{12}$  a terminating or a repeating decimal?

Divide 1 by 12.

$$\begin{array}{r} 0.0833 \\ 12 \overline{)1.0000} \\ \underline{-96} \phantom{00} \\ 40 \\ \underline{-36} \phantom{0} \\ 40 \\ \underline{-36} \phantom{0} \\ 4 \end{array} \quad \leftarrow \text{The 3 in the quotient will continue to repeat.}$$

So,  $\frac{1}{12}$  is a repeating decimal. It can be written as  $0.08\overline{3}$ . The bar over the 3 means that it repeats.

Write the fraction as a decimal.

1.  $\frac{27}{50}$

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2.  $\frac{11}{12}$

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

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

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

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

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7.  $\frac{19}{30}$

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8.  $\frac{4}{9}$

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

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10.  $\frac{15}{16}$

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11.  $\frac{3}{40}$

\_\_\_\_\_

12.  $\frac{1}{15}$

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

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14.  $\frac{7}{12}$

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

\_\_\_\_\_

16.  $\frac{11}{40}$

\_\_\_\_\_

17.  $\frac{7}{9}$

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18.  $\frac{17}{25}$

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