

3.8 Dividing Decimals


Objective: To divide decimals



To divide a decimal by a whole number

Step 1: Use long division

Step 2: Line up the decimal point in the quotient with decimal places in the dividend


$$\begin{array}{r} \textit{quotient} \\ \hline \textit{divisor} \overline{) \textit{dividend}} \end{array}$$

Example

1) $6.9 \div 3$

$$\begin{array}{r} 2.3 \\ 3 \overline{) 6.9} \\ \underline{6} \\ 09 \\ \underline{9} \\ 0 \end{array}$$

Practice

$$2) \begin{array}{r} 1.65 \\ 5 \end{array}$$

0.33

$$3) \begin{array}{r} 87.42 \\ 6 \end{array}$$

14.57

$$4) \begin{array}{r} 67.8 \\ 12 \end{array}$$

5.65

$$5) \begin{array}{r} 45.6 \\ 12 \end{array}$$

3.8

To divide a decimal by a decimal

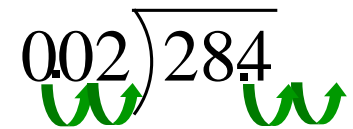
Step 1: Use long division

Step 2: In both the divisor and dividend, **move the decimal point** the same number of decimal places and in the same direction

Step 3: Line up the decimal point in the quotient with the decimal point in the dividend

Example

1) $28.4 \quad 0.02$

$$\begin{array}{r} 0.02 \overline{) 284} \\ \underline{ 284} \\ 0 \end{array}$$


Example

1) $28.4 \quad 0.02$

$$\begin{array}{r} 002 \overline{) 2840.} \\ \underline{28} \\ 40 \\ \underline{40} \\ 00 \end{array}$$

(Note: The image shows green arrows pointing to the '002' and '2840' parts of the division.)

Example

1) $28.4 \quad 0.02$
 $1420.$

$$\begin{array}{r} 002. \overline{) 2840.} \\ \underline{2} \\ 08 \\ \underline{8} \\ 04 \\ \underline{4} \\ 00 \\ \underline{00} \\ 0 \end{array}$$

Note: The diagram includes green arrows pointing from the '002.' multiplier to the '2' in the first subtraction step, and from the '002.' multiplier to the '00' in the final subtraction step. A vertical arrow also points from the '00' in the second-to-last row down to the final '0'.

Practice

$$2) \begin{array}{r} 1.45 \\ + 0.2 \\ \hline \end{array}$$

7.25

$$3) \begin{array}{r} 47.4 \\ + 1.2 \\ \hline \end{array}$$

39.5

$$4) \begin{array}{r} 126.21 \\ + 7.5 \\ \hline \end{array}$$

16.828

$$5) \begin{array}{r} 24.75 \\ + 2.2 \\ \hline \end{array}$$

11.25