

# Section 4.3 Multiplying Decimals

Buy a product  
Buy 3 of them

$$\begin{array}{r} \overset{2}{6}.\overset{2}{99} \\ \times \quad 3 \\ \hline 20.\overset{2}{97} \end{array}$$

count the number of decimal places in both numbers

Count that many places in your answer.

10.  $3.5 \cdot 9.3$   
 $3.5(9.3)$

$$\begin{array}{r} \overset{1}{9.3} \\ \times \overset{1}{3.5} \\ \hline \overset{1}{465} \\ + \overset{1}{279} \\ \hline 32.\overset{2}{55} \end{array}$$

Line up the digits on the right

72.  $\overset{2}{.003}$   
 $\times \overset{2}{.09}$   

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 $\overset{5}{.00027}$

5 decimal places

46.  $(5.1)^2$   
 $= 26.01$

$$\begin{array}{r} 5.1 \\ \times 5.1 \\ \hline 151 \\ 255 \\ \hline \end{array}$$

$2(5.1) = 10.2$

$3^2 = 3 \cdot 3 = 9$   
 ~~$3$~~   $2 \cdot 3 = 6$

26.01

$$\begin{aligned}
 70. & \quad \underline{(-8.1 - 7.8)} \underline{(0.3 + 0.7)} \\
 & = \underline{(-15.9)} \underline{(1.0)} \\
 & = -15.9 \quad = 1
 \end{aligned}$$

$$\begin{array}{r}
 -8.1 \\
 + -7.8 \\
 \hline
 -15.9 \\
 \\
 \begin{array}{r}
 0.3 \\
 0.7 \\
 \hline
 1.0
 \end{array}
 \end{array}$$

$$\begin{aligned}
 22. & \quad \underbrace{2.09}_{\leftarrow \leftarrow} \cdot 100 \quad \begin{array}{l} \leftarrow \leftarrow 2 \text{ places.} \\ \text{to the right} \end{array} \\
 & = 209
 \end{aligned}$$

For every zero, move the decimal to the right one place.

$$\begin{aligned}
 24. & \quad \underbrace{0.034}_{\leftarrow \leftarrow \leftarrow \leftarrow} (10,000) \\
 & = 340 \quad \begin{array}{l} \rightarrow \\ 4 \text{ places} \end{array}
 \end{aligned}$$

$$\begin{aligned}
 44. & \quad \underbrace{491.565}_{\leftarrow \leftarrow \leftarrow} (-1,000) \\
 & = -491,565 \quad \begin{array}{l} \rightarrow \\ 3 \text{ places} \end{array}
 \end{aligned}$$

$$\begin{aligned}
 26. & \quad \underbrace{317.09}_{\leftarrow \leftarrow} \cdot \underbrace{.01}_{\downarrow} \\
 & \quad 3.1709
 \end{aligned}$$

$$\begin{array}{r}
 317.09 \\
 \quad .01 \\
 \hline
 \underline{3.1709} \\
 3.1709
 \end{array}$$

$\frac{1}{100}$   
 ← move the decimal to the left using the number of decimal places.