

2.5 MULTIPLYING DECIMALS

Essential Question:

HOW TO MULTIPLY DECIMALS

1) Multiply as you would with whole numbers.

2) Count how many numbers are after the decimal point in the number(s) you are multiplying.

3) Your answer should have that many numbers after its decimal point.

EXAMPLE 1

1) Multiply 6×3.91

$$\begin{array}{r} 3.91 \\ \times 6 \\ \hline 23.46 \end{array}$$

2) Multiply 3×0.016

$$\begin{array}{r} 0.016 \\ \times 3 \\ \hline 0.048 \end{array}$$

ON YOUR OWN

Multiply.

1) 12.3×8

$$\begin{array}{r} 12.3 \\ \times 8 \\ \hline 98.4 \end{array}$$

2) 5×14.51

$$\begin{array}{r} 14.51 \\ \times 5 \\ \hline 12.55 \end{array}$$

3) 0.88×9

$$\begin{array}{r} 0.88 \\ \times 9 \\ \hline 7.92 \end{array}$$

4) 0.003×10

$$\begin{array}{r} 0.003 \\ \times 10 \\ \hline 0.030 \end{array}$$

EXAMPLE 2

How high is a stack of 100 dimes?



1.35 millimeters

A stack of 100 dimes is
135 millimeters tall.

EXAMPLE 3

Multiply.

1) 4.8×7.2

$$\begin{array}{r} 4.8 \\ \times 7.2 \\ \hline 34.56 \end{array}$$

2) 3.1×0.05

$$\begin{array}{r} 0.05 \\ \times 3.1 \\ \hline 0.155 \end{array}$$

ON YOUR OWN

Multiply.

1) 8.1×5.6

$$\begin{array}{r} 8.1 \\ \times 5.6 \\ \hline 486 \\ 4050 \\ \hline 45.36 \end{array}$$

2) 2.7×9.04

$$\begin{array}{r} 9.04 \\ \times 2.7 \\ \hline 6328 \\ 18080 \\ \hline 24.408 \end{array}$$

3) 6.32×0.09

$$\begin{array}{r} 6.32 \\ \times 0.09 \\ \hline 5688 \\ 0062 \\ \hline 0.5688 \end{array}$$

4) 1.785×0.2

$$\begin{array}{r} 1.785 \\ \times 0.2 \\ \hline 3570 \\ 00000 \\ \hline 0.3570 \end{array}$$

EXAMPLE 4

Evaluate the expression.

1) $2.44(4.5 - 3.175)$

$$\begin{array}{r} 2.44(1.325) \\ 4.5 \\ - 3.175 \\ \hline 1.325 \\ 112 \\ 1.325 \\ - 12 \\ \hline 15300 \\ 15300 \\ 265000 \\ \hline 323300 \end{array}$$

2) $12.67 + 8.2 \cdot 1.9$

$$\begin{array}{r} 12.67 + 8.2 \\ \times 1.9 \\ \hline 24.25 \\ 138 \\ 820 \\ \hline 1558 \\ 1558 \\ 1267 \\ \hline 28.25 \end{array}$$

3) $6.4(1.8 \cdot 7.5)$

$$\begin{array}{r} 6.4(13.50) \\ 57.6 \\ \times 1.5 \\ \hline 190 \\ 1260 \\ \hline 2313.50 \\ 212 \\ 13.50 \\ \times 576 \\ \hline 540.0 \\ 81000 \\ \hline 86400 \end{array}$$

EXAMPLE 5

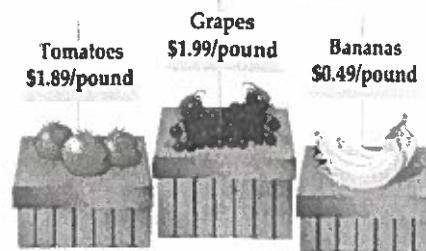
You buy 2.75 pounds of tomatoes. You hand the cashier a \$10 bill. How much change will you receive?

- ① Find the cost of the tomatoes.

$$\begin{array}{r} 2.75 \\ \times 1.89 \\ \hline 22000 \\ 21500 \\ \hline 5.1975 \end{array}$$

Cost of tomatoes:

is \$5.1975.



Tomatoes
\$1.89/pound

Grapes
\$1.99/pound

Bananas
\$0.49/pound

$$\begin{array}{r} 10.00 \\ - 5.1975 \\ \hline 4.8025 \end{array}$$

You will

receive

\$4.80 in

change.

- ② Subtract the cost of tomatoes from the amount of money you give cashier.
Round to nearest hundredth.