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Multiplying Decimals by Two-Digit Whole Numbers

1 Here's How

Multiply decimals by two-digit whole numbers one place at a time. Multiply by the ones first. Then multiply by the tens. Add the partial products.

A **partial product** is the product of one place of a factor and the other factor.

Omit decimal points in the partial products.

Look at this example.

$$\begin{array}{r} 8.3 \\ \times 14 \\ \hline 332 \end{array}$$

Step 1

Multiply by the ones: $4 \times 83 = 332$. Write the partial product.

$$\begin{array}{r} 8.3 \\ \times 14 \\ \hline 332 \\ 830 \\ \hline 830 \end{array}$$

Step 2

Multiply by the tens: $10 \times 83 = 830$. Write the partial product under the first partial product.

$$\begin{array}{r} 8.3 \\ \times 14 \\ \hline 332 \\ 830 \\ \hline 116.2 \end{array}$$

Step 3

Add the partial products. The sum is the total product.

Count the number of decimal places in the factors. There is one. Write the decimal point in the product one place from the right.

The product of 14×8.3 is 116.2.

2 Try It

Complete each step.

$32 \times 0.34 =$

Write the problem vertically in the space at the left. Do the work there.

Multiply by the ones. The partial product is _____.

Multiply by the tens. The partial product is _____.

Add the partial products. The sum is _____.

How many decimal places are in the factors? _____

Place the decimal point.

The product is _____.

3 On Your Own

Multiply.

$$\begin{array}{r} 1. \quad 0.8 \\ \times 42 \\ \hline 16 \\ 320 \\ \hline 33.6 \end{array}$$

$$\begin{array}{r} 2. \quad 1.2 \\ \times 53 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 0.5 \\ \times 24 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 3.2 \\ \times 86 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 0.71 \\ \times 15 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 2.42 \\ \times 27 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 0.56 \\ \times 91 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 1.45 \\ \times 39 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 0.214 \\ \times 71 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 1.004 \\ \times 44 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 0.725 \\ \times 16 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 5.203 \\ \times 68 \\ \hline \end{array}$$

Write each problem vertically. Then multiply.

$$13. \quad 12 \times 3.4 =$$

$$\begin{array}{r} 3.4 \\ \times 12 \\ \hline 68 \\ 340 \\ \hline 40.8 \end{array}$$

$$14. \quad 53 \times 7.5 =$$

$$15. \quad 38 \times 3.19 =$$

$$16. \quad 81 \times 0.525 =$$

4 Think About It

Answer the question. Write your answer below.

17. When one factor is a decimal less than 1 and the other is a whole number, how does the product compare to the whole number? Is it larger or smaller? Explain.