Multiplying Decimals with Whole Numbers

Multiplying a decimal with a whole number is a repeated addition and a fast way of adding a series of decimals. For example 2.4 × 6 means to add 2.4 together 6 times.

1. Multiply the decimal and the whole number as if they were both whole numbers.
2. Count the number of decimal places in the decimal factor. Place the decimal point in the product so that there is the same number of decimal places as in the decimal factor.

Example 1

Complete the following equation: 0.58 × 6 =

Explanation

Step 1: Move the decimal point 2 places to the right:

0.58 → 58 Equivalent of multiplying by 100.

Step 2: Multiply as if they were both whole numbers:

$$\begin{array}{r} 58 \\ \times\ \ 6 \\ \hline 348 \end{array}$$

Step 3: Count the number of decimal places (2) in the decimal factor (0.58).

Place the decimal point in the product so that there is the same number of decimal places as in the decimal factor (3.48). Equivalent of dividing by 100.

Therefore 0.58 × 6 = 3.48.

Example 2

Complete the following equation: 0.125 × 8 =

Explanation

Step 1: Move the decimal point 3 places to the right:

0.125 → 125 Equivalent of multiplying by 1000.

Step 2: Multiply as if they were both whole numbers:

$$\begin{array}{r} 125 \\ \times \quad 8 \\ \hline 1000 \end{array}$$

Step 3: Count the number of decimal places (3) in the decimal factor (0.125).

Place the decimal point in the product so that there is the same number of decimal places as in the decimal factor (1.000). Equivalent of dividing by 1000.

Therefore $0.125 \times 8 = 1$.

Example 3

Complete the following equation: $0.78 \times 15 =$

Explanation

Multiply as if they were both whole numbers.

$$\begin{array}{r} 0.78 \\ \times \quad 15 \\ \hline 390 \\ +\ 78 \\ \hline 11.70 \end{array}$$

Place 2 decimal places.

Remove the zero at the end of the product.

Therefore $0.78 \times 15 = 11.7$.

Example 4

Complete the following equation: $9.34 \times 80 =$

Explanation

Multiply as if they were both whole numbers.

$$\begin{array}{r} 9.34 \\ \times \quad 80 \\ \hline 747.20 \end{array}$$

Place 2 decimal places.

Remove the zero at the end of the product.

Therefore $9.34 \times 80 = 747.2$.

Common mistakes

In the following calculation, 0 was not put in the product, result in a wrong calculation.

$$\begin{array}{r} 9.34 \\ \times \quad 80 \\ \hline 74.72 \end{array}$$

0 was not put in.