

2.5 Notes Multiplying Decimals

Key Idea

Multiplying Decimals by Whole Numbers

Words Multiply as you would with whole numbers. Then count the number of decimal places in the decimal factor. The product has the same number of decimal places.

Numbers

$$\begin{array}{r} 13.91 \\ \times 7 \\ \hline 97.37 \end{array}$$

2 decimal places

$$\begin{array}{r} 6.218 \\ \times 4 \\ \hline 24.872 \end{array}$$

3 decimal places

Multiplying Decimals and Whole Numbers

a. Find 6×3.91 .

Estimate $6 \times 4 = 24$

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

2 decimal places

Count 2 decimal places from right to left.



So, $6 \times 3.91 = 23.46$.

Reasonable? $23.46 \approx 24$ ✓

Try It Multiply. Use estimation to check your answer.

1. 12.3×8

2. 5×14.51

3. $20 \cdot 0.008$

4. $2.3275 \cdot 90$

Key Idea

Multiplying Decimals by Decimals

Words Multiply as you would with whole numbers. Then add the number of decimal places in the factors. The sum is the number of decimal places in the product.

Numbers

4.71 6	←	3 decimal places
× 0.2	←	+ 1 decimal place
0.9432	←	4 decimal places

Try It Multiply. Use estimation to check your answer.

5. 8.1×5.6

6. 2.7×9.04

7. 6.32×0.09

8. 1.785×0.2

Evaluating an Expression

What is the value of $2.44(4.5 - 3.175)$?

A. 3.233

B. 3.599

C. 7.805

D. 32.33