

Study Guide:

Your Turn:

Multiplying Decimals

Part I: Multiplying Decimals

When multiplying decimals, our product (result) has the same number of decimal digits / decimal places as the total number of decimal digits in the factors (except for terminal zeroes). For example, let's look at the example of 3.5×1.25 with standard multiplication.

$$\begin{array}{r} 1. \boxed{25} - 1 \text{ Decimal Digit} \\ \quad \quad \quad / \text{ Decimal Place} \\ \times 3. \boxed{5} - 2 \text{ Decimal Digits} \\ \quad \quad \quad / \text{ Decimal Places} \\ \hline - - - - \\ 4. \boxed{375} - 3 \text{ Decimal Digit} \\ \quad \quad \quad / \text{ Decimal Places.} \end{array}$$

As you can see, our product has 3 digits after the decimal point. The first factor had 1, the second factor had 2, and so the total number of decimal digits in our product is 3, as of course $1 + 2 = 3$. Simple!

However, you should pay attention to if one of your factors has any zeroes at the end of the decimal space. For example, 2.50×1.5 . If you have any terminal zeroes, you should rewrite the problem without those zeroes! That is to say, we should write 2.50×1.5 instead as 2.5×1.5 .

$$\begin{array}{r} 2. \boxed{5} - 1 \text{ Decimal digit.} \\ \times 1. \boxed{5} - 1 \text{ Decimal digit.} \\ \hline - - - - \\ 3. \boxed{75} - 2 \text{ Decimal digits. } \blacksquare \end{array}$$

1. 0.59×100

2. 12.4×0.1

3. 8.7×0.01

4. 67.2×10

5. 4.2×3

6. 9.15×2.1

7. 12.5×15.60

8. 1.111×1.111

9. 6.25×1.21

10. 3.54×8.511

11. Taylor wants to buy a necklace, a ring, a bracelet, and a headband. If each item costs \$1.50, then how much will all the items cost together?

12. The school's playground has a length of 12.3 meters and a width of 7.2 meters. What is the area of the school's playground?

13. Ms. Gilman purchased a new classroom rug.
What is the area of the rug she purchased?



14. Lucio went to a market to buy some fruits and vegetables. Today, mangoes were \$1.20 each, and potatoes were \$0.55 each. If he bought 3 mangoes, and 5 potatoes, what is the total amount of money he spent? Write an expression or equation to show how to set up this problem.

15. If $0.25 \times n = 0.50$, then $n = ?$

16. If $n \times 0.07 = 0.021$, then $n = ?$

17. If $12 \times n = 1.44$, then $n = ?$

18. If $120 \times n = 0.120$, then $n = ?$

19. Michael multiplies 0.4 by a number. After multiplying, he notes that the product was 0.12. What was the number Michael multiplied with?

20. Arienne buys cashews at \$0.35 per pound. She buys 0.2 pounds of the cashews. Lucienne buys 0.6 pounds of cashews from a different store at \$0.15 per pound. Who spent more money in total, and by how much?