

Multiply The Pairs Of Numbers And Match Them With Their Products. Tiles

(-5) (4.2) (-7) (-3) (4) (5) (2.5) (-9)

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Understanding how to multiply pairs of numbers and accurately match them with their products is a fundamental skill in mathematics, especially for students learning about operations involving integers, fractions, and decimals. Whether you're working with simple whole numbers or more complex decimal and fractional pairs, mastering this concept helps lay the groundwork for more advanced topics such as algebra, ratios, and proportional reasoning. In this article, we will explore various pairs of numbers—specifically the tiles $(-5)(4.2)$, $(-7)(-3)$, $(4)(5)$, and $(2.5)(-9)$ —and demonstrate how to multiply them correctly, match them with their products, and understand the underlying principles behind each calculation.

Understanding Multiplication of Different Types of Numbers

Before delving into specific examples, it is crucial to understand the rules of multiplication across different types of numbers. These rules include:

Multiplying Integers

- When multiplying two integers:
- If both are positive, the product is positive.
- If one is positive and the other negative, the product is negative.
- If both are negative, the product is positive.

Multiplying Decimals

- Multiply as if there are no decimal points.
- Count the total number of decimal places in both factors.
- Place the decimal point in the product accordingly.

Multiplying Fractions and Decimals

- Convert fractions to decimals or vice versa as needed.
- Follow multiplication rules for fractions or decimals as above.

Step-by-Step Solutions for the Given Pairs

Let's analyze each pair, perform the multiplication, and correctly match each with its product.

Title 1: $(-5) \times 4.2$

- Step 1: Recognize the numbers involved: a negative integer and a decimal.
- Step 2: Multiply the absolute values: 5×4.2
- $5 \times 4.2 = 21$ (since $5 \times 4 = 20$ and $5 \times 0.2 = 1$, sum = 21)
- Step 3: Determine the sign:
- Negative $\times$ positive = negative
- Step 4: Final product: -21

Result: $(-5)(4.2) = -21$

Title 2: $(-7) \times (-3)$

- Step 1: Both numbers are negative integers.
- Step 2: Multiply absolute values: $7 \times 3 = 21$
- Step 3: Sign determination:
- Negative $\times$ negative = positive
- Step 4: Final product: +21

Result: $(-7)(-3) = 21$

Title 3: $(4) \times (5)$

- Step 1: Both are positive integers.
- Step 2: Multiply: $4 \times 5 = 20$
- Step 3: Sign is positive.
- Result: $(4)(5) = 20$

Title 4: $(2.5) \times (-9)$

- Step 1: One decimal, one negative integer.
- Step 2: Multiply absolute values: 2.5×9
- $2.5 \times 9 = 22.5$ (since $2.5 \times 10 = 25$, subtract 2.5: $25 - 2.5 = 22.5$)
- Step 3: Sign:
- positive $\times$ negative = negative
- Final product: -22.5

Result: $(2.5)(-9) = -22.5$

Summary of Results

Pair	Calculation	Product
$(-5)(4.2)$	$-(5 \times 4.2)$	-21
$(-7)(-3)$	$-(7 \times 3)$	21
$(4)(5)$	4×5	20
$(2.5)(-9)$	$-(2.5 \times 9)$	-22.5

Tips for Multiplying Different Types of Numbers

Multiplying different types of numbers can sometimes be tricky, but following these tips can make the process easier:

1. Always handle the absolute values first

- Ignore signs initially and multiply the absolute values to determine the magnitude of the product.

2. Pay attention to decimal places

- When multiplying decimals, count the total number of decimal places in the factors.
- Place the decimal point in the product accordingly.

3. Determine the sign after multiplication

- Use the sign rules:
- Positive $\times$ positive = positive
- Negative $\times$ negative = positive
- Positive $\times$ negative = negative

4. Convert fractions to decimals if needed

- Simplify complex calculations by converting fractions to decimals or vice versa.

Practice Problems to Reinforce Your Skills

To solidify your understanding, try solving these practice problems:

1. What is the product of (-8) and 3.5 ?
2. Multiply (-4.2) by (-2.5) .
3. Calculate $7 \times (-0.6)$.
4. Find the product of (-3) and (-4.8) .
5. Multiply 6.25 by -2 .

Answers:

1. $-8 \times 3.5 = -28$
2. $(-4.2) \times (-2.5) = 10.5$
3. $7 \times (-0.6) = -4.2$
4. $(-3) \times (-4.8) = 14.4$
5. $6.25 \times -2 = -12.5$

Conclusion

Mastering the multiplication of various pairs of numbers—whether integers, decimals, or mixed—is essential for progressing in mathematics. By

understanding the rules of multiplying positive and negative numbers, handling decimal places carefully, and practicing with different examples, learners can build confidence and accuracy. Remember to always analyze the signs first, multiply the absolute values, and then assign the correct sign to the product. With consistent practice, multiplying pairs of numbers and matching them with their products will become second nature, supporting your success in more advanced math topics.

Whether you're working through homework, preparing for exams, or simply honing your math skills, the principles outlined in this article serve as a solid foundation for multiplying pairs of numbers effectively. Keep practicing with varied pairs, and you'll soon find multiplication becoming an intuitive and powerful tool in your mathematical toolkit.

Frequently Asked Questions

What is the product of the pair (-5) and 4.2 ?

-21.0

What is the result when multiplying (-7) and (-3) ?

21

What is the product of 4 and 5 ?

20

Calculate the product of 2.5 and -9 .

-22.5

Which pair multiplies to give 20 ?

4 and 5

Which pair results in -22.5 when multiplied?

2.5 and -9

Match the pairs with their products: $(-5)(4.2)$, $(-7)(-3)$, $(4)(5)$, $(2.5)(-9)$.

$(-5)(4.2) = -21.0$, $(-7)(-3) = 21$, $(4)(5) = 20$, $(2.5)(-9) = -22.5$

Additional Resources

Multiply the pairs of numbers and match them with their products is a fundamental skill in mathematics that forms the foundation for understanding algebra, number operations, and problem-solving. Whether you're a student brushing up on basic multiplication or a teacher designing practice

exercises, mastering how to multiply pairs of numbers and correctly match them with their products is essential. This guide will take you through a detailed, step-by-step process to understand, calculate, and match pairs of numbers with their products, using specific examples like $(-5)(4.2)$, $(-7)(-3)$, and others.

Understanding the Concept of Multiplying Pairs of Numbers

Before diving into the specific pairs provided, it's important to understand the core concept:

- Multiplication involves finding the total number of units when groups are combined.
- When multiplying two numbers, the sign (positive or negative) and the magnitude (absolute value) influence the product.
- The product is the result of the multiplication.

For example:

- Positive $\times$ Positive = Positive
- Negative $\times$ Negative = Positive
- Positive $\times$ Negative = Negative

Understanding these rules helps in accurately determining the product of any pair of numbers.

The Pairs to Multiply and Match

The specific pairs of numbers you are working with are:

- $(-5)(4.2)$
- $(-7)(-3)$
- 4 (by itself)
- 5 (by itself)
- $2.5(-9)$

Notice that some are pairs (multiplication of two numbers), while others are single numbers. Our goal is to:

1. Multiply each pair.
2. Match the resulting product with the corresponding pair.

Step-by-Step Breakdown of Each Pair

Let's analyze each pair, perform the multiplication, and interpret the results.

1. Pair: $(-5)(4.2)$

Calculation:

- Multiply the absolute values: $5 \times 4.2 = 21$
- Determine the sign: Since one number is negative and the other positive, the product is negative.

Result:

- Product = -21

Explanation: Multiplying a negative number by a positive number yields a negative product. Therefore, the product of $(-5)(4.2)$ is -21.

2. Pair: $(-7)(-3)$

Calculation:

- Multiply the absolute values: $7 \times 3 = 21$
- Determine the sign: Both numbers are negative, so their product is positive.

Result:

- Product = 21

Explanation: Negative times negative equals positive, so the product here is 21.

3. Single number: 4

Understanding:

- Since it is a single number, the product is simply 4 itself, unless it is to be multiplied with another number.

Result:

- Product = 4

4. Single number: 5

Understanding:

- As with 4, the product here is 5 unless there is a pairing.

Result:

- Product = 5

5. Pair: $2.5(-9)$

Calculation:

- Multiply the absolute values: $2.5 \times 9 = 22.5$
- Determine the sign: one positive and one negative, so the product is negative.

Result:

- Product = -22.5

Explanation: Multiplying a positive and negative number results in a negative number.

Summarizing the Results

Pair	Calculation Details	Product
(-5)(4.2)	$5 \times 4.2 = 21$; Negative sign $\rightarrow$	-21
(-7)(-3)	$7 \times 3 = 21$; Both negatives $\rightarrow$	+21
4	Single number, product is	4
5	Single number, product is	5
2.5(-9)	$2.5 \times 9 = 22.5$; Negative sign $\rightarrow$	-22.5

Matching the Products with Their Corresponding Pairs

Now that we have calculated the products, the next step is to match each product with its original pair:

- -21: from (-5)(4.2)
- 21: from (-7)(-3)
- 4: standalone number
- 5: standalone number
- -22.5: from 2.5(-9)

This process helps reinforce the understanding of how specific pairs relate to their products, which is especially useful in exercises involving multiple choices or matching questions.

Additional Tips for Multiplying Pairs

To ensure accuracy and efficiency, consider the following tips:

1. Always Handle Signs First

- Determine if the product will be positive or negative based on the signs of the numbers.
- Use the rule:
 - Negative $\times$ Negative = Positive
 - Negative $\times$ Positive = Negative
 - Positive $\times$ Positive = Positive

2. Multiply the Absolute Values

- Ignore signs initially.
- Focus on multiplying the magnitudes.
- Then apply the appropriate sign to the product.

3. Use a Calculator for Complex Numbers

- For decimal or fractional numbers like 4.2 or 2.5, using a calculator can prevent errors.
- Double-check your multiplication results to ensure accuracy.

4. Practice with Similar Pairs

- To solidify understanding, practice multiplying various pairs, including positive, negative, whole numbers, and decimals.

Practice Exercises

To enhance your skills, try the following practice exercises:

1. Multiply and match: $(-3)(7)$, $(6)(-4)$, $(-2.5)(4)$, $(8)(-3)$, and 9.
2. Match the following products with their pairs:
 - 15
 - -12
 - 20
 - -7.5
 - 0

Solutions:

- $(-3)(-5) = 15$
- $(6)(-2) = -12$
- $(4)(5) = 20$
- $(-2.5)(3) = -7.5$
- $(0)(\text{any number}) = 0$

Final Thoughts

Mastering the skill of multiplying pairs of numbers and matching them with their products is a vital step in developing strong mathematical foundations. Whether dealing with whole numbers, decimals, or negative values, understanding how signs influence the result ensures accuracy and confidence. Remember to approach each pair systematically—determine signs first, multiply magnitudes second, and then interpret the product accordingly. With consistent practice, you'll find this process becomes quicker and more intuitive, paving the way for tackling more complex algebraic problems and real-world applications.

In summary, by carefully analyzing each pair, performing the multiplication step-by-step, and understanding the underlying rules of signs and magnitudes, you can confidently match pairs of numbers with their correct products, transforming a potentially challenging task into a straightforward process.

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Products Tiles 5 4 2 7 3 4 5 2 5 9

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