Multiplication of 3-digit number by a 2-digit number

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It means multiplying a number having three digits (like 123) by another number having two digits (like 42). We use the long multiplication method to solve such problems step by step.

Steps to Multiply

Step 1: Write the numbers one below the other with the bigger number on top

Step 2: Multiply the top number by the ones digit of the bottom number

Step 3: Multiply the top number by the tens digit of the bottom number and place the result in the tens place

Step 4: Add both the partial products to get the final answer

Properties Used

Distributive Property: $a \times (b + c) = (a \times b) + (a \times c)$

Commutative Property: a × b = b × a

Zero Property: any number × 0 = 0

Identity Property: any number × 1 = the same number

Example 1:

Question: Multiply 123 by 45

Solution:

Step 1: Multiply 123 × 5 = 615

Step 2: Multiply 123 × 40 = 4920

Step 3: Add the products: 615 + 4920 = 5535

Answer: 123 × 45 = 5535

Example 2:

Question: Multiply 204 by 13

Solution:

Step 1: Multiply 204 × 3 = 612

Step 2: Multiply 204 × 10 = 2040

Step 3: Add both products: 612 + 2040 = 2652 **Answer:** 204 × 13 = 2652

Summary Points

- To multiply a 3-digit number by a 2-digit number, use long multiplication
- Multiply by ones digit, then by tens digit, and add the results
- Use place value properly when writing the second line of multiplication
- Multiplication properties help in faster calculations and understanding
- Practice helps in gaining speed and accuracy in large number multiplication