



STRATEGY

Multiplying Numbers by 111

Strategy

Find the value of 58×111 .

$$58 \times 100 = 5,800$$

$$\begin{aligned} 58 \times 11 &= (50 \times 11) + (8 \times 11) \\ &= 550 + 88 \\ &= 638 \end{aligned}$$

$$5,800 + 638 = 6,438$$

$$58 \times 111 = \mathbf{6,438}$$

Step 1: Multiply the first factor by 100.

Step 2: Expand the factor. Multiply both parts by 11.

Step 3: Find the sum of the products obtained in Steps 1 and 2.

Solve each problem mentally.

1. $22 \times 111 =$

3. $39 \times 111 =$

5. $90 \times 111 =$

7. $55 \times 111 =$

9. $79 \times 111 =$

2. $46 \times 111 =$

4. $64 \times 111 =$

6. $72 \times 111 =$

8. $81 \times 111 =$

10. $17 \times 111 =$

Multiplication by 111

To multiply mentally by 111, follow these steps:

- Write the last digit of the number.
- Add the last digit to the digit on its left; write the last digit of the sum and carry if necessary.
- Add the last digit to the digit on its left and to the next digit on its left; add the carry from the previous steps. Write the last digit of the sum and carry if necessary.
- Move one digit to the left and add the two digits on its left. Add any carry. Write and carry.
- Continue moving one digit to the left until the end of the number.

EXAMPLE:

$$24 \times 111 =$$

Write the 4 4
Add 4 and 2. $4 + 2 = 6$. 64
Add 4 and 2 and 0. $4 + 2 + 0 = 6$ 64
Move to the 2.
Add 2 and 0 and 0. $2 + 0 + 0 = 2$ 2664

$$24 \times 111 = 2664$$

EXAMPLE:

$$453 \times 111 =$$

Write the 3. 3
Add 3 and 5. $3 + 5 = 8$ 83
Add 3 and 5 and 4. $3 + 5 + 4 = 12$ 283 (carry 1)
Move to the 5.
Add 5 and 4 and 0 and the carry. $5 + 4 + 0 + 1 = 10$ 0283 (carry 1)
Move to the 4.
Add 4 and 0 and 0 and the carry. $4 + 0 + 0 + 1 = 5$ 50283

$$453 \times 111 = 50283$$