Associative Property – Summary

The associative property states that when three or more numbers are added or multiplied, the way in which the numbers are grouped (the placement of parentheses) does not change the result.

1. Addition

For any numbers a, b, and c:
(a + b) + c = a + (b + c)
Example: (2 + 3) + 4 = 2 + (3 + 4) = 9
The sum is the same no matter how the addends are grouped.

2. Multiplication

For any numbers a, b, and c:
(a × b) × c = a × (b × c)
Example: (2 × 3) × 4 = 2 × (3 × 4) = 24
The product is the same no matter how the factors are grouped.

3. Not valid for subtraction or division

(a - b) - c ≠ a - (b - c)
(a ÷ b) ÷ c ≠ a ÷ (b ÷ c)
Subtraction and division are not associative.

In short: Changing the grouping of numbers in addition or multiplication does not change the result.