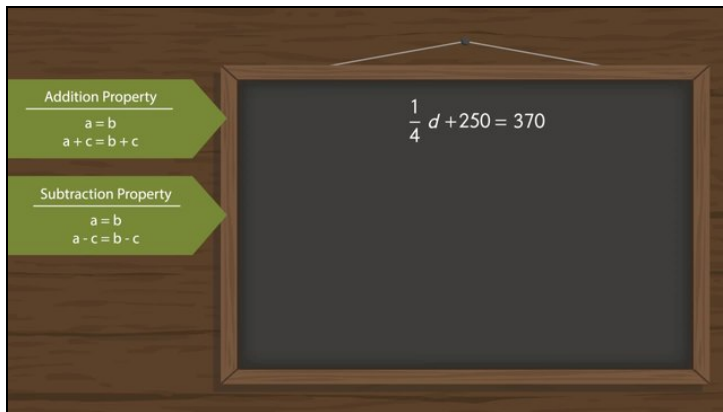




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# Applying Algebraic Properties of Equality



- 1 Identify which expressions equal the given values.
- 2 Explain the addition and subtraction properties of equality.
- 3 Match the properties of equalities with their corresponding general equations.
- 4 Determine which statements are true about properties of equalities.
- 5 Label each calculation with the property of equality being used.
- 6 Decide which property of equality is being used in each step of the calculation.
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



# Identify which expressions equal the given values.

Match each expression to the correct value.

1 $9 + 8$	2 $17 \cdot 1$	3 $4 \cdot (2 \cdot 1)$	4 $(4 \cdot 3) \cdot 1$
5 $(4 \cdot 2) \cdot 1$	6 $5 + 3$	7 $5 + (1 + 6)$	8 $8 + 9$
9 $3 + 5$	10 $4 \cdot (3 \cdot 1)$	11 $(5 + 1) + 6$	12 $1 \cdot 17$

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A

12

B

8

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C

17



## Hints for solving these problems

1  
of 6

### Identify which expressions equal the given values.

#### Hint #1

If we are given the expression,  $5 + (2 + 1)$ , order of operations tells us to add the parentheses first:

- $5 + (2 + 1) = 5 + 3 = 8$

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#### Hint #2

Notice that the order in which we add numbers does not change the result.

- $5 + 2 = 7$
  - $2 + 5 = 7$
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#### Hint #3

Multiplication works the same way as addition.

Order of operations tells us to multiply the parentheses first:

- $2 \cdot (4 \cdot 3) = 2 \cdot 12 = 24$

Notice that the order in which you multiply two numbers does not change the result.

- $3 \cdot 2 = 6$
  - $2 \cdot 3 = 6$
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## Answers and detailed answer explanations for these problems

1  
of 6

### Identify which expressions equal the given values.

**Answer key:** A: 4, 7, 10, 11 // B: 3, 5, 6, 9 // C: 1, 2, 8, 12

$$(5 + 1) + 6 = 12 \text{ and } 5 + (1 + 6) = 12$$

- Notice that the sum of a group of numbers is the same regardless of how they are grouped. This is called the **associative property of addition**.

$$(4 \cdot 2) \cdot 1 = 8 \text{ and } 4 \cdot (2 \cdot 1) = 8$$

$$4 \cdot (3 \cdot 1) = 12 \text{ and } (4 \cdot 3) \cdot 1 = 12$$

- Notice that the product of a group of numbers is the same regardless of how they are grouped. This is called the **associative property of multiplication**.

$$5 + 3 = 8 \text{ and } 3 + 5 = 8$$

$$9 + 8 = 17 \text{ and } 8 + 9 = 17$$

- Notice that the sum of two numbers is the same regardless of what order they are in. This is called the **commutative property of addition**.

$$17 \cdot 1 = 17 \text{ and } 1 \cdot 17 = 17$$

- Notice that the product of two numbers is the same regardless of what order they are in. This is called the **commutative property of multiplication**.