Printable Worksheets from sofatutor.com

Applying Algebraic Properties of Equality
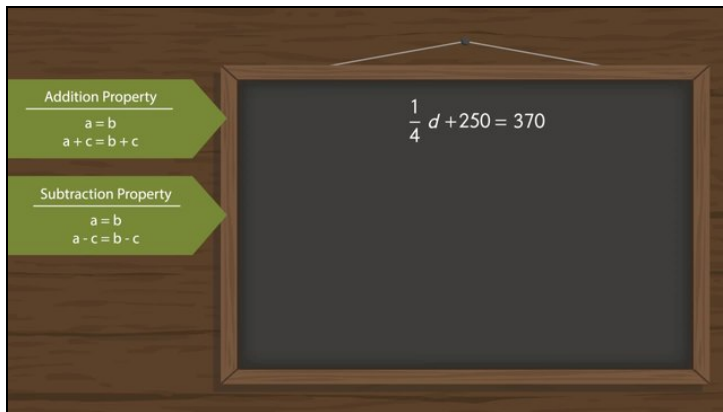
① **Identify which expressions equal the given values.**

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 subscribers.

Worksheet: Applying Algebraic Properties of Equality
Mathematics / Middle School / Expressions and Equations / Solve Problems Using Expressions, Equations, and Inequalities/ Applying Algebraic Properties of Equality

1
of 6

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 $1 \cdot 17$

A 12

B 8

C 17

sofatutor.com

Worksheet: Applying Algebraic Properties of Equality

Mathematics / Middle School / Expressions and Equations / Solve Problems Using Expressions, Equations, and Inequalities/ Applying Algebraic Properties of Equality

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:

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

Hint #2

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

- $5 + 2 = 7$
- $2 + 5 = 7$

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.

- $3 \cdot 2 = 6$
- $2 \cdot 3 = 6$

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

$(5+1)+6=12$ 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.**

$(4\cdot2)\cdot1=8$ and $4\cdot(2\cdot1)=8$

$4\cdot(3\cdot1)=12$ and $(4\cdot3)\cdot1=12$
- 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.**

$5+3=8$ and $3+5=8$

$9+8=17$ 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.**

$17\cdot1=17$ and $1\cdot17=17$
- Notice that the product of two numbers is the same regardless of what order they are in. The is called the **commutative property of multiplication.**

sofatutor.com