

Algebraic Properties

- _____ 1. Name the Property of Equality that justifies this statement:
If $g = h$, then $g + k = h + k$.
A. Addition Property
B. Multiplication Property
C. Transitive Property
D. Reflexive Property
- _____ 2. Which statement is an example of the Reflexive Property of Equality?
A. If $p = q$ then $p - s = q - s$.
B. $x + a = x + b$
C. If $p = q$ then $p \cdot s = q \cdot s$.
D. $x = x$

Use the given property to complete the statement.

- _____ 3. Transitive Property of Congruence
If $\overline{MN} \cong \overline{LK}$ and $\overline{LK} \cong \overline{OP}$, then _____.
A. $\overline{LK} \cong \overline{OP}$
B. $\overline{LK} \cong \overline{LK}$
C. $\overline{MN} \cong \overline{LK}$
D. $\overline{MN} \cong \overline{OP}$
- _____ 4. Division Property of Equality
If $2x \cdot 10 = 40$, then _____.
A. $2x \div 10 = 4$
B. $2x = 4$
C. $40 = 2x \cdot 10$
D. $40 = 2x \div 10$
- _____ 5. Substitution Property of Equality
If $y = -7$ and $8x + y = 10$, then _____.
A. $8x + 7 = 10$
B. $-7 + y = 10$
C. $8x - 7 = 10$
D. $8(-7) + y = 10$
- _____ 6. Name the Property of Congruence that justifies the statement:
If $\overline{RS} \cong \overline{UW}$, then $\overline{UW} \cong \overline{RS}$.
A. Transitive Property
B. Reflexive Property
C. Symmetric Property
D. none of these
- _____ 7. Name the Property of Congruence that justifies this statement:
If $\angle A \cong \angle B$ and $\angle B \cong \angle C$, then $\angle A \cong \angle C$.
A. Transitive Property
B. Symmetric Property
C. Reflexive Property
D. none of these

_____ 8. Complete the two-column proof.

Given: $10x - 3y = -5$; $x = -4$

Prove: $\frac{-35}{3} = y$

$10x - 3y = -5$; $x = -4$ a. _____

$-40 - 3y = -5$ b. _____

$-3y = 35$ c. _____

$y = \frac{-35}{3}$ d. _____

$\frac{-35}{3} = y$ e. _____

- A. a. Given
b. Symmetric Property of Equality
c. Addition Property of Equality
d. Division Property of Equality
e. Reflexive Property of Equality
- B. a. Given
b. Substitution Property
c. Addition Property of Equality
d. Division Property of Equality
e. Symmetric Property of Equality

- C. a. Given
b. Substitution Property
c. Addition Property of Equality
d. Addition Property of Equality
e. Symmetric Property of Equality
- D. a. Given
b. Substitution Property
c. Addition Property of Equality
d. Division Property of Equality
e. Reflexive Property of Equality

_____ 9. Complete the two-column proof.

Given: $\frac{x}{2} + 7 = 13$

Prove: $x = 12$

$\frac{x}{2} + 7 = 13$ a. _____

$\frac{x}{2} = 6$ b. _____

$x = 12$ c. _____

- A. a. Given
b. Addition Property of Equality
c. Multiplication Property of Equality
- B. a. Given
b. Subtraction Property of Equality
c. Division Property of Equality

- C. a. Given
b. Subtraction Property of Equality
c. Multiplication Property of Equality
- D. a. Given
b. Addition Property of Equality
c. Division Property of Equality

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Answer Section

1. A
2. D
3. D
4. B
5. C
6. C
7. A
8. B
9. C

