

	Commutative
Rule	$a + b = b + a$ $a * b = b * a$
Examples	$x + 3 = 3 + x$ $m\angle A + m\angle B = m\angle B + m\angle A$

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	Associative
Rule	$(a + b) + c = a + (b + c)$ $(a * b) * c = a * (b * c)$
Examples	$x(5 \cdot y) = (x \cdot 5)y$ $(m\angle 1 + m\angle 2) + m\angle 3 = m\angle 1 + (m\angle 2 + m\angle 3)$

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	Reflexive
Rule	$a = a$
Examples	$xy = xy$ $AB = AB$

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	Symmetric
Rule	If a = b, then b = a
Examples	If $2x = 3$, then $3 = 2x$ If $AB = 5$, then $5 = AB$

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	Transitive
Rule	If a = b and b = c, then a = c
Examples	If $x = 3$ and $3 = y$, then $x = y$ If $m\angle 1 = 90^\circ$ and $90^\circ = m\angle 2$, then $m\angle 1 = m\angle 2$

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	Substitution
Rule	If a = 8, then you can replace a with the number 8.
Examples	If $AB = 10$ and $AB + BC = 30$, then $10 + BC = 30$

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	Distribution
Rule	$a(b + c) = a * b + a * c$
Examples	$5(x+2) = 5x+10$

Addition: $a + c = b + c$

Subtraction: $a - c = b - c$

Multiplication: $a * c = b * c$

Division: $a/c = b/c$

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Match the property name with the property illustrated.

A. Commutative Property	F. Distributive Property
B. Associative Property	G. Substitution Property
C. Reflexive Property	H. Addition/Subtraction Property
D. Symmetric Property	I. Multiplication/Division Property
E. Transitive Property	

- D 1. If $XY = OP$, then $OP = XY$
- H 2. If $AB - 8 = CD - 8$, then $AB = CD$
 $+8$ $+8$
- A 3. $a + b = b + a$
- E 4. If $EF = GH$ and $GH = LM$, then $EF = LM$
- G 5. If $m\angle 1 + m\angle 2 = 100^\circ$ and $m\angle 2 = 30^\circ$, then $m\angle 1 + 30^\circ = 100^\circ$

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Match the property name with the property illustrated.

A. Commutative Property	F. Distributive Property
B. Associative Property	G. Substitution Property
C. Reflexive Property	H. Addition/Subtraction Property
D. Symmetric Property	I. Multiplication/Division Property
E. Transitive Property	

- C 6. $PS = PS$
- F 7. $5(x + 3) = 5x + 15$
- D 8. If $\angle 1 \cong \angle 2$, then $\angle 2 \cong \angle 1$
- B 9. $(13 \cdot 25) \cdot 4 = 13 \cdot (25 \cdot 4)$
- I 10. If $3x = 12$, then $x = 4$

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