

Property	
1. Addition Property of Equality	e. If $x - 14 = 17$, then $x = 31$
2. Subtraction Property of Equality	h. If $x + 3 = 15$, then $x = 12$
3. Multiplication Property of Equality	f. If $\frac{y}{3} = 12$, then $y = 36$
4. Division Property of Equality	g. If $3x = -45$, then $x = -15$
5. Distributive Property of Equality	b. $3(a + b) = 3a + 3b$
6. Substitution Property of Equality	a. If $m\angle A = 45^\circ$, then $3(m\angle A) = 135^\circ$
7. Reflexive Property of Equality	c. $m\angle B = m\angle B$
8. Symmetric Property of Equality	i. If $BC = RL$, then $RL = BC$
9. Transitive Property of Equality	d. If $x = y$ and $y = z$ then $x = z$

Statement
a. If $m\angle A = 45^\circ$, then $3(m\angle A) = 135^\circ$
b. $3(a + b) = 3a + 3b$
c. $m\angle B = m\angle B$
d. If $x = y$ and $y = z$ then $x = z$
e. If $x - 14 = 17$, then $x = 31$
f. If $\frac{y}{3} = 12$, then $y = 36$
g. If $3x = -45$, then $x = -15$
h. If $x + 3 = 15$, then $x = 12$
i. If $BC = RL$, then $RL = BC$

1. Complete the following table with the properties used to solve $4(x + 3) = 20$.

Statements	Proof
$4(x + 3) = 20$	Given
$4x + 12 = 20$	Distributive Property
$4x = 8$	Subtraction Property
$x = 2$	Division Property



2. Complete the following table with the mathematical statements that correspond to the proofs used to solve $\frac{4(x-3)}{3} = 20$.

Statements	Proof
$\frac{4(x-3)}{3} = 20$	Given
$4(x-3) = 60$	Multiplication Property of Equality
	Distributive Property
$4x = 72$	Addition Property of Equality
$x = 18$	Division Property of Equality



3. Fill in the two-column algebra proof.

Given: $5y + 4 = 2(y + 3) + 1$

Prove: $x = 1$

Statements	Reasons
$5y + 4 = 2(y + 3) + 1$	Given
A. $5y + 4 = 2y + 6 + 1$	Distributive Property
B. $5y + 4 = 2y + 7$	F. Simplify/Combine Like terms
C. $3y + 4 = 7$	G. Subtraction Property
D. $3y = 3$	H. Subtraction Property
E. $y = 1$	I. Division Property