

Properties of Equality

Property	Notes
Addition Property of Equality	If $a = b$, then $a + c = b + c$.
Subtraction Property of Equality	If $a = b$, then $a - c = b - c$.
Multiplication Property of Equality	If $a = b$, then $ac = bc$.
Division Property of Equality	If $a = b$, then $\frac{a}{c} = \frac{b}{c}$ $c \neq 0$.
Distributive Property	If $a(b + c)$, then $a(b + c) = ab + ac$.
Substitution Property	If $a = b$ then a may be REPLACED by b in any expression or equation. *plug in!
Reflexive Property	For any real number a, $a = a$. $2 = 2$ (A value always will equal itself!)
Symmetric Property	If $a = b$, then $b = a$. $2 = x \rightarrow x = 2$ * Flip
Transitive Property	$2 = x^2 + 4$ $x^2 + 4 = y \rightarrow 2 = y$ If $a = b$ and $b = c$, then $a = c$.

Deductive Reasoning	the process of reasoning <u>logically</u> from given statements or facts
Proof	Convincing argument that uses deductive reasoning