

Properties of Equality

Reflexive Property $a = a$

Symmetric Property if $a = b$, then $b = a$.

Transitive Property if $a = b$ and $b = c$, then $a = c$.

Substitution Property if $a = b$, then b can be substituted for a in any expression

Properties of Equality

Addition Property if $a = b$, then $a + c = b + c$.

Subtraction Property if $a = b$, then $a - c = b - c$.

Multiplication Property if $a = b$, then $a \cdot c = b \cdot c$.

Division Property if $a = b$, then $a \div c = b \div c$.

Distributive Property $c(a + b) = c \cdot a + c \cdot b$

Prove that if $2x - 5 = 9$, then $x = 7$

Given: $2x - 5 = 9$

Prove: $x = 7$

Statements	Reasons

Prove that if $5 - \frac{2}{3}x = 1$, then $x = 6$

Given: $5 - \frac{2}{3}x = 1$

Prove: $x = 6$

Statements	Reasons

Given: $4 - \frac{1}{2}x = \frac{7}{2} - x$

Prove: $x = -1$

Statements	Reasons

Properties of Equality

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Division Property if $a = b$, then $a \div c = b \div c$.

Distributive Property $c(a + b) = c \cdot a + c \cdot b$