Math: Properties of Equality

Name: _____ Date:_____

Properties of Equality

In math, every equation is like a scale. The equal sign is the central pivot point and everything on each side must be the same value, so that the scale balances properly.

Property	Examples
Addition Property of Equality If you add (or subtract) the same number on each side of the equation, the equation remains true. **If a = b, then a + c = b + c**	*43 + 7 = (40 + 3) + 7* *16 - 4 = (10 + 6) - 4*
Multiplication Property of Equality If you multiply (or divide) the same number on each side of the equation, the equation remains true. **If a = b, then a x c = b x c**	*20 x 3 = (10 x 2) x 3* *40 ÷ 4 = (20 x 2) ÷ 4*
Reflexive Property of Equality Anything is congruent to itself. The equal sign is like a mirror that reflects the same as the original. **a = a**	*45 = 45* *-16 = -16*
Symmetric Property of Equality If two values are equal, they can be flipped to opposite sides of the equal sign. **If a = b, then b = a**	*6 + 6 = 12, so 12 = 6 + 6* *3 x 7 = 21, so 21 = 3 x 7*
Transitive Property of Equality If two values are equal to a third value, the two are equal. **If a = b and c = b, then a = c**	*3 + 4 = 7 and 2 + 5 = 7, so 3 + 4 = 2 + 5* *2 x 8 = 16 and 4 x 4 = 16, so 2 x 8 = 4 x 4*