

Solutions to Equations and Inequalities

Solution - the value or values that make an equation or inequality true



Is $m = 4$ a solution to $5m + 10 > 7m - 2$?

To determine if a given value is a solution:

1. Substitute the given value into the equation or inequality

$$5m + 10 > 7m - 2 \quad \text{Is } m = 4 \text{ a solution?}$$

$$5(4) + 10 > 7(4) - 2$$

2. Simplify the expression on either side of the equation or inequality

NOTE: the $>$, $<$, or $=$ sign **separates** the 2 sides (2 expressions)

$$\begin{array}{ccc} \boxed{5(4)+10} > \boxed{7(4)-2} & & \\ \swarrow \quad \searrow & & \swarrow \quad \searrow \\ 5(4)+10 & & 7(4)-2 \\ \downarrow \quad \downarrow & & \downarrow \quad \downarrow \\ 20+10 & & 28-2 \\ 30 & > & 26 \end{array}$$

3. Determine if the simplified expressions satisfy the equal sign or inequality symbol

$$30 > 26$$

30 is greater than 26



Is this statement TRUE? click to reveal