

TI 83/84: Use the Calculator to Check Your Equation Solution:

Suppose you tried to solve the equation $2x = x + 3$ and think the answer is $x = 3$. An easy way to check to see if you have the right answer is to use your calculator's STORE key. Here's how:

Store your answer in the variable X by pressing $\boxed{3}$, then $\boxed{\text{STO}}$, then $\boxed{\text{X,T,}\odot,\text{n}}$, then $\boxed{\text{ENTER}}$. Your TI will tell you it has stored the 3 by returning the value 3 in the next line.

Now, type the left hand side (LHS) of your ORIGINAL equation and press $\boxed{\text{ENTER}}$. Then, type the right hand side (RHS) of your ORIGINAL equation and press $\boxed{\text{ENTER}}$. Are the two results equal? Yes! That means that $x = 3$ was the correct solution.

3→X	
2X	3
X+3	6
	6

Because both sides of the equation came out to the same number, we know we have the correct answer.

Summary:

- 1) Store your answer as x .
- 2) Type in the left-hand side (LHS) of the ORIGINAL equation, get an answer.
- 3) Type in the right-hand side (RHS) of the ORIGINAL equation, get an answer.
- 4) Check that the two sides came out equal!

Solve each equation, and check every answer on your calculator.

$$2(x-1) + 6x = 242 - 2x$$

$$2x - 2 + 6x = 242 - 2x$$

$$\begin{array}{r} 8x - 2 = 242 - 2x \\ +2x \quad +2 \quad \quad +2 \quad +2x \end{array}$$

$$\frac{10x}{10} = \frac{244}{10}$$

$$x = \frac{122}{5} = 24.4$$

LHS = 193.2

RHS = 193.2

Do they match? *yes!*

$$\frac{15}{1} \left[\frac{x}{3} + 6 \right] = \left[\frac{x-2}{5} \right] \frac{15}{1}$$

Multiply every term by the LCD to cancel the fractions!

$$5x + 90 = 3(x-2)$$

$$\begin{array}{r} 5x + 90 = 3x - 6 \\ -3x \quad -90 \quad -3x \quad -90 \end{array}$$

$$\frac{2x}{2} = \frac{-96}{2}$$

$$x = -48$$

LHS = -10

RHS = -10

Do they match? *yes!*

(You'll need parentheses when you check this on your calculator -- where?)

$$\frac{60}{1} \left[\frac{2y}{3} - \frac{3}{4} \right] = \left[\frac{1}{20} \right] \frac{60}{1}$$

Multiply every term by the LCD to cancel the fractions!

$$20(2y) - 15(3) = 3(1)$$

$$\begin{array}{r} 40y - 45 = 3 \\ +45 \quad +45 \end{array}$$

$$\frac{40y}{40} = \frac{48}{40}$$

$$y = 1.2 = \frac{6}{5}$$

LHS = .05

RHS = .05

Do they match? *yes!*

$$x^2 - 6 = 5x$$

$$\begin{array}{r} -5x \\ -5x \end{array}$$

$$x^2 - 5x - 6 = 0$$

$$(x-6)(x+1) = 0$$

$$\boxed{x=6, -1}$$

For your first answer: $x = \underline{6}$

$$\text{LHS} = 30$$

$$\text{RHS} = 30$$

Do they match? *yes!*

For your second answer: $x = \underline{-1}$

$$\text{LHS} = -5$$

$$\text{RHS} = -5$$

Do they match? *yes!*

$$3(x-2)^2 + \frac{7}{-7} = 28$$

(solve by $\pm\sqrt{\quad}$, don't multiply it out.
Answer in simplified radical form.)

$$\frac{3(x-2)^2}{3} = \frac{21}{3}$$

$$\pm\sqrt{(x-2)^2} = \pm\sqrt{7}$$

$$\begin{array}{r} x-2 \\ +2 \end{array} = \pm\sqrt{7}$$

$$\boxed{x = 2 \pm \sqrt{7}}$$

For your first answer: $x = \frac{2 + \sqrt{7}}{\text{(simplified radical answer)}} \approx \frac{4.64575\dots}{\text{(decimal answer, don't round)}}$

$$\text{LHS} = 28$$

$$\text{RHS} = 28$$

Do they match? *yes!*

For your second answer: $x = \frac{2 - \sqrt{7}}{\text{(simplified radical answer)}} \approx \frac{-0.64575\dots}{\text{(decimal answer, don't round)}}$

$$\text{LHS} = 28$$

$$\text{RHS} = 28$$

Do they match? *yes!*