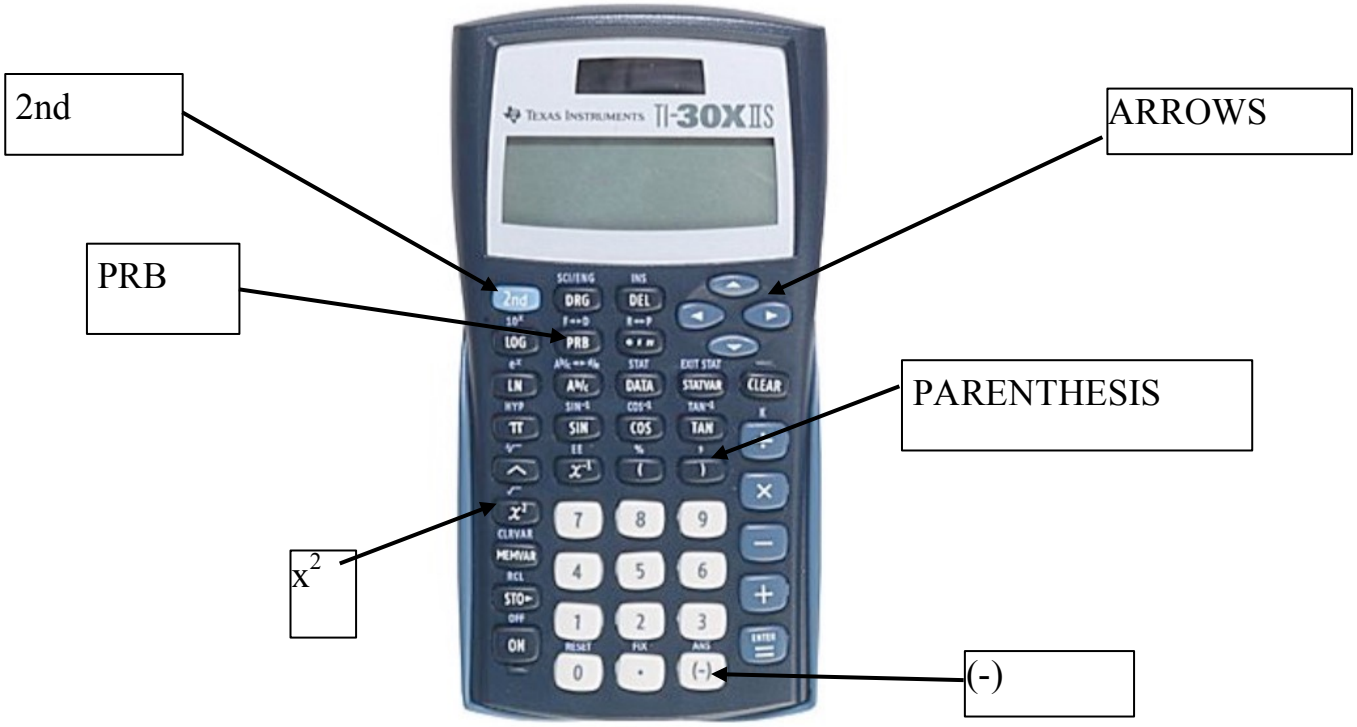

The calculator always uses the correct orders of operation.
You need to ensure that what you are inputting is correct.

➢ Simplify the following expression without using the calculator and then input it into your calculator to see if you have the same answer.

$$16 \div 8 \times 2 =$$

The calculator will give an answer of 4. If you multiplied before dividing you have an answer of 1.

Remember multiplication and division are done in order from left to right. Since the division comes first, you should divide first and then multiply. This is why it is very important to input the problem correctly. It you wanted to multiply first you need to input the expression with parenthesis such as $16 \div (8 \times 2) =$. It is very important to place grouping symbols where appropriate.

➢ To simplify the expression $\dfrac{56 - 4(20 - 13)}{(2 + 6)^2 - 2(37 - 6)}$ there are two option:

1st - input the expression as a single line using ÷ in place of the fraction bar and ensuring that the numerator and denominator are both in parenthesis:

$$(56 - 4(20 - 13)) \div ((2+6)\ x^2\ -2(37-6)) =$$

Your screen should look like: $(56-4(20-13)) \,/\, ((2+6)^2-2(37-6))$

Using Orders of Operation in Formulas

2nd - input the numerator expression 56 – 4(20 – 13), then press = key. Now you have calculated the value of the numerator. Press divide ÷ key and enter the denominator expression ((2+6) x^2 -2(37-6)) =

Your screen should look like: 56-4(20-13) =	28
Ans / ((2+6)^2-2(37-6))	14

The orders of operation become important when substituting values into a formula.

1. Quadratic formula: $\frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$; solve $4x^2 + 5x - 3 = 0$ using the quadratic formula

   ➢ (a = 4; b = 5; c = -3) hence you need to input the following expression: $\frac{-5 \pm \sqrt{(5^2 - 4(4)(-3))}}{2(4)}$

(NOTE: you can only compute one value at a time, so begin with the positive root.)

➢ input the expression as a single line using ÷ in place of the fraction bar and ensuring that the numerator and denominator are both in parenthesis:

((-)5 + 2nd x^2 (5 x^2 ⁻ 4×4×(-)3)) ÷ (2×4) =

Your screen should look like: (-5 + √(5^2 ⁻ 4*4*-3) **) / (** 2*4**) =**	0.443000468

This is the decimal value. If you want a result in a fraction form, press 2nd PRB =

Whenever you want to reenter the previous expression to make a simple change, press the right arrow key and the previous expression will appear on the screen. To calculate the other root, the sign before the square root in the previous expression is the only entry that needs to be changed.

➢ Press the right arrow to access the previous expression. Using the right arrow key to move the cursor on the + and hit −. This removes the + and inputs –. (Be sure that you use the subtraction button and not the (-) button.)

Your screen should look like: (-5 − √(5^2 ⁻ 4*4*-3) **) / (** 2*4**) =**	-1.69300046