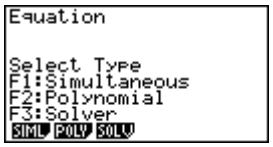
EQUATION

This section is an overview of the EQUATION Icon. To select this icon, highlight it and press EXE or press X,θ,T.

The initial Equation Editor screen has three modes to choose from, Simultaneous, Polynomial, and Solver; this section will give an overview of each mode.



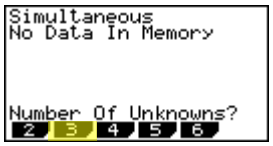
The Simultaneous mode allows you to solve simultaneous linear equations that contain two to six unknowns.

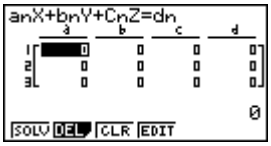
1. Solve the following system of equations:

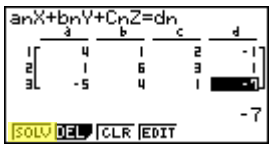
$$\begin{cases} 4x + y - 2z = -1 \\ x + 6y + 3z = 1 \\ -5x + 4y + z = -7 \end{cases}$$

Press F1 to select the Simultaneous mode and press F2 for three unknowns. The calculator will display a matrix where the coefficients and constants can be entered in to as long as each equation is in *standard* form. To enter this system of equations (already in standard form) input the following:

- 4 EXE 1 EXE (−) 2 EXE (−) 1 EXE
- 1 EXE 6 EXE 3 EXE 1 EXE
- (−) 5 EXE 4 EXE 1 EXE (−) 7 EXE

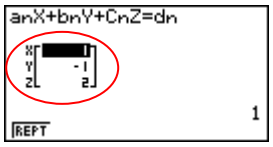






There are four options at the bottom of the screen, press F1 (SOLV). The solution to this system is (1,-1,2).

$$\begin{bmatrix} x = 1 \\ y = -1 \\ z = 2 \end{bmatrix}$$



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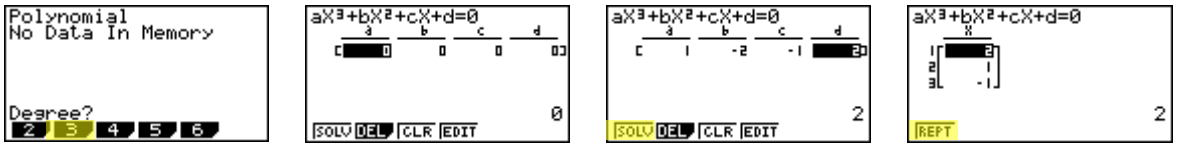
Press EXIT to return to the previous screen, press F1 (REPT) to edit this problem or continue solving simultaneous equations with three unknowns. To edit just one of the numbers in the system, arrow to the number to be edited and press F4 (EDIT) or highlight the number to be edited and just enter the new number, then press EXE.

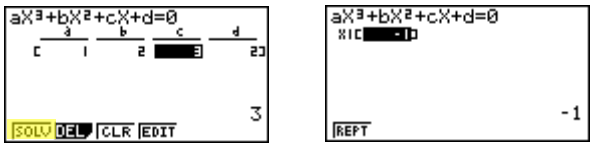
Press EXIT until the Equation Editor screen is displayed. The second mode is F2 Polynomial and can be used to solve second to sixth degree polynomial equations (in standard form).

2. To solve the equation $x^3 - 2x^2 - x + 2 = 0$, input the following:

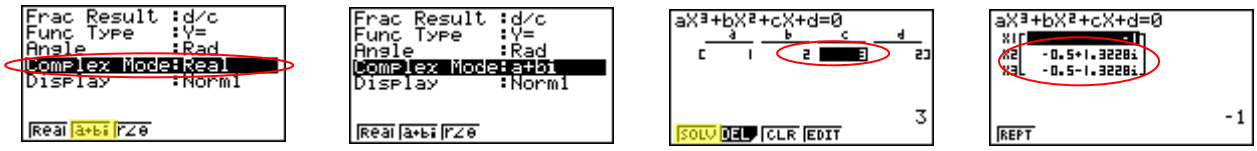
   - F2 F2 1 EXE (–) 2 EXE (–) 1 EXE 2 EXE F1



3. To change the equation to $x^3 + 2x^2 + 3x + 2 = 0$, select F1 (REPT) and change the b- value to 2, the c-value to 3 and press F1 (SOLV).



4. The default setting is for real numbers; to change the display to a+bi form, press SHIFT MENU for the Polynomial SET UP menu, select F2 (a+bi), EXIT, then F1 (SOLV).



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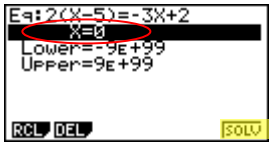
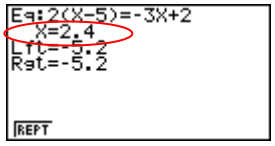
Solver is the third function and allows you to determine the value of any variable in a formula or equation. You can input any formula exactly as it appears using ALPHA for any variables. In this example, we will solve a linear equation and a formula.

5. To find the value of x in the following equation, 2(x -5) = -3x + 2, input the following, starting from the Equation Editor Screen:

   - F3 2 cos X,θ,T − 5 tan SHIFT • (−) 3 X,θ,T + 2 EXE F6



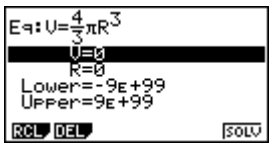


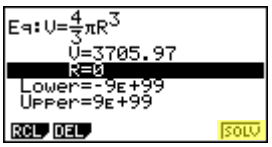
Note: In the last screen, “Lft” and “Rgt” represent the values of the left and right sides of the equation using the value of the solution; this is the calculator’s way of checking the solution.

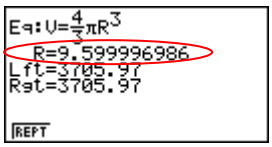
You can also enter a formula, assign values, and solve for a specific variable using the Solver function of the Equation Editor.

6. Find the radius (to the nearest hundredth) of a sphere, whose volume is 3705.97 cm^3. To enter the formula $V = \frac{4}{3}\pi r^3$ input the following into the calculator:

   - F1 ▲ ALPHA 2 SHIFT • $a\frac{b}{c}$ 4 ▼ 3 ▶ SHIFT EXP ALPHA 6 ^ 3 EXE







Note: Selecting F1 will take you back to the previous screen where you can edit and re-solve the previous equation or begin a new problem.