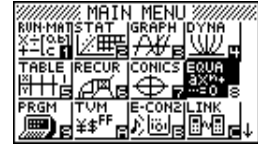


Solving Polynomial Equations with Complex Roots in the EQUA icon.

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Select the **EQUA** icon from the **Main Menu** by using the arrow keys to highlight the **EQUA** icon or by pressing the **[8]** key.



Equation

Select Type

F1: Simultaneous

F2: Polynomial

F3: Solver

SIMU POLY SOLU

Polynomial

Data Exists In Memory

Degree: 3

Degree?

2 3 4 5 6

Select **[F3]** for Polynomial and then select the appropriate degree **[F1]**, **[F2]**, **[F3]**, **[F4]** or **[F5]**.

When entering the polynomial coefficients the format of the polynomial **MUST** be in the form:

$$a_0x^n + a_1x^{n-1} + \dots + a_{n-1}x + a_n = 0$$

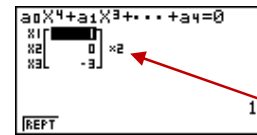
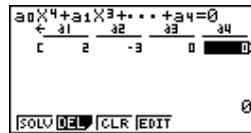
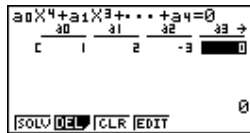
Example 1: Solve $0 = x^4 + 2x^3 - 3x^2$

Enter Polynomial **[F2]** and select **[F3]**, for 4, a quartic equation (Highest power is 4: ax^4).

Here the coefficients are: 1, 2, -3, 0, 0 respectively.

Enter the coefficients of this quartic: 1 **[EXE]** 2 **[EXE]** -3 **[EXE]** 0 **[EXE]** 0 **[EXE]**.

Press **[EXE]** after each entry.



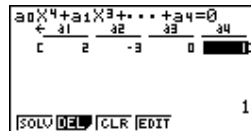
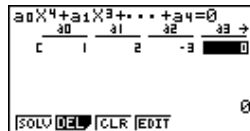
Press **[F1]** to **SOLVe**.

[Note: There are two roots where $x = 0$ and are displayed as $\times 2$.]

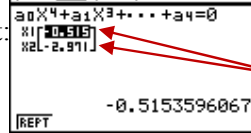
Example 2: Solve $0 = x^4 + 2x^3 - 3x^2 + 1$

Here the coefficients are: 1, 2, -3, 0, 1 respectively. Press **[EXE]** after each entry.

Enter the coefficients of this quartic: 1 **[EXE]** 2 **[EXE]** -3 **[EXE]** 0 **[EXE]** 1 **[EXE]**.



Pressing **[F1]** to **SOLVe**, you will get:

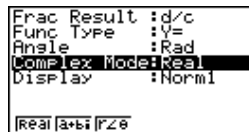


Showing only the two real solutions.

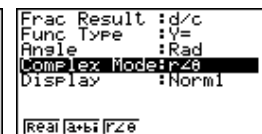
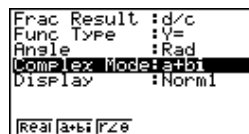
Enter **[SHIFT]** **[MENU]** for **SETUP**.



Arrow down to

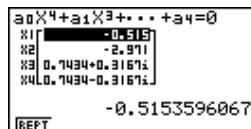


and change to rectangular select **[F2]** for 'a+bi' **OR** polar form **[F3]** of complex numbers then **[EXIT]**.

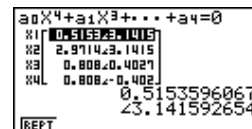


Solving again **[F1]**, the answers will have all four roots displayed.

Rectangular form 'a+bi'



OR polar form.



For further tips, more helpful information and software support visit our websites

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