

EES
Getting Started
Solving Simultaneous Equations

The following will demonstrate how to solve simultaneous equations using EES. The techniques used to solve the example problem may be applied to solve much more complicated problems. For this example, we will solve three simultaneous equations with integer coefficients.

The set of equations we will attempt to solve are as follows:

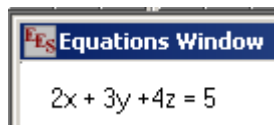
$$x + y + z = 1$$

$$2x + 3y + 4z = 5$$

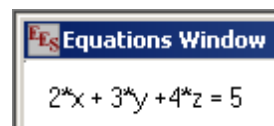
$$6x + 7z - (8y)^2 = 0$$

The first step in EES is to type in the equations to the Equations Window. When typing an equation into EES, it is important to remember several facts:

- EES is not case sensitive.
 - EES views x and X as the same variable.
- EES requires that all operators be inserted into the equations.
 - EES will not correctly solve the following:

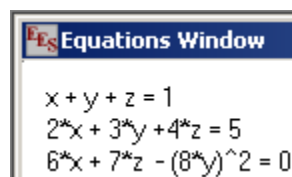



- EES will solve the following equation after operators are included:

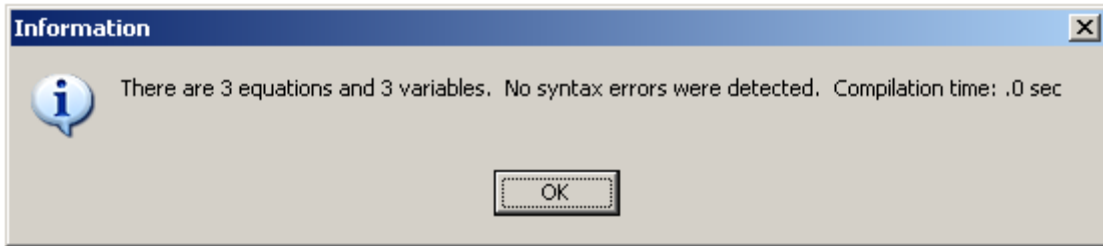



- Equations should be entered on their own individual line. If you prefer to work on one line, the equations should be separated by a semicolon.

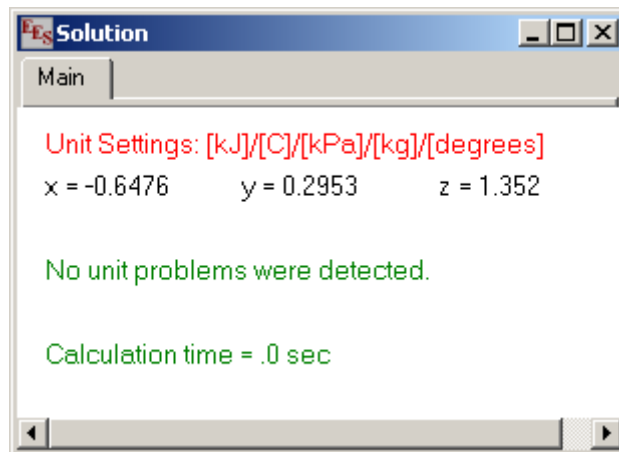
After you enter all the equations, the Equations Window should appear as follows:



While not necessary to solving the set of equations, it is useful to check and see if you have entered a valid set of equations. This is done by pressing the “Check Equations” button, . If you have entered a valid set of equations, the following screen will appear:



Once you have validated your set of equations, press the solve button, .



As can be seen above, EES provides the numerical solutions to the set of simultaneous equations in an orderly and convenient form. EES is not the most convenient program to solve many complex mathematical problems but for simultaneous equations it is hard to beat.