Solving Polynomial Equations (C)

We haved seen that polynomial equations can be solved if they are quadratic equations or hidden quadratic equations. There are general formulae for solving cubic and quartic equations, but they are frequently so cumbersome as to be useless. Our stategy will be to try to factor polynomial equation to solve them.

The thing to keep in mind is

Theorem 2680 (Fundamental Theorem of Algebra)

If $p(z)$ is a polynomial whose coefficients are complex numbers and $p(z)$ is not constant, then $p(z) = 0$ has a solution.

Hence polynomial equations have solutions, and the only question is whether or not we are clever enough to find them. Unless we say otherwise, we want to find all solutions, even the complex-valued ones.