

The first part of the solution is to find the value of the constant k in the equation $ax^2 + bx + c = 0$ where a, b, c are constants and x is the variable. The value of k is found by comparing the coefficients of the equation with the standard form of a quadratic equation.



The next part of the solution is to find the roots of the equation. The roots of a quadratic equation are given by the formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. The discriminant $b^2 - 4ac$ determines the nature of the roots. If the discriminant is positive, the equation has two real roots. If the discriminant is zero, the equation has one real root. If the discriminant is negative, the equation has two complex roots.