a) **Factorised Form (by letting each factor to be 0)**
   - $ax(bx + c) = 0$
   - $(ax + p)(bx + q) = 0$
b) **General Form by factorization method.**
   - $ax^2 + bx + c = 0$

Roots of Quadratic Equations

i) The root of a quadratic equation is the value of the variable **x**

   which satisfies the equation.
ii) To solve a given quadratic equation means to find the value of the variable (normally variable x) which satisfies the given equation.
iii) A given quadratic equation may have:
a. No real roots   or
b. Two real roots which are distinct (real and different)
c. Two real roots which are the same (only one root)
iv) A quadratic equation can be easily solved if it is given in the forms below:
a. Factorised Form with the RHS equal 0
   ▪ $ax(bx + q) = 0$ or $(ax + p)(bx + q) = 0$
   b General Form: $ax^2 + bx + c = 0$

v) For examples:

1. Solve the following quadratic equations.

a) $3x(x + 2) = 0$ [Factorised Form with 0 on the RHS]
   Hence, $3x = 0$ or $x + 2 = 0$ [By letting each factor be 0]
   $x = 0$ or $x = -2$
   Ans: The roots are 0 and – 2.

b) $5x(7x - 7) = 0$ [Factorised Form with 0 on the RHS]
   Hence, $5x = 0$ or $7x - 7 = 0$ [By letting each factor be 0]
   $x = 0$ or $7x = 7$
   $x = 1$
   Ans: The roots are 0 and 1.