Unit 1 Quadratic Equations

Q: Define quadratic equation. $(\boldsymbol{ALP})$

An equation that contains the square of the unknown (variable) quantity, but not higher power is called a quadratic equation or an equation of the second degree. For example, $5x^2 + 2x - 3 = 0$

Q: Write general or standard form of second degree equation.

A second degree equation in one variable x is $ax^2 + bx + c = 0$, where $a \neq 0$ and a, b, c are constants is called the general or standard form of quadratic equation. Where a is coefficient of x^2, b is the coefficient of x and constant term is c.

Q: Define pure quadratic equation.

If $b = 0$ in a quadratic equation $ax^2 + bx + c = 0$ then it is called a pure quadratic equation. For example, $4x^2 - 16 = 0$

Q: Write the name of methods for solving a quadratic equation. $(\boldsymbol{ALP})$

To find solution set of quadratic equation, following methods are used

- **(i)** Factorization
- **(ii)** Completing square
- **(iii)** Quadratic formula

Q: Define reciprocal equation. $(\boldsymbol{ALP})$

An equation is said to be a reciprocal equation if it remains unchanged, when x is replaced by $\frac{1}{x}$. For example, $x + \frac{1}{x} = 2$

Q: Define exponential equation. $(\boldsymbol{ALP})$

In exponential equations variable occurs in exponent. For example, $2^x - 1 = 0$

Q: Define radical equation. $(\boldsymbol{ALP})$

An equation involving expression of the variable under radical sign is called radical equation. For example, $\sqrt{x+1} = 2$

Q: What is meant by extraneous root?

A root of an equation which does not satisfy the original equation is called extraneous root.