CBSE Class–10 Mathematics
Revision Notes
CHAPTER 02
POLYNOMIALS

1. Geometrical Meaning of the Zeroes of a Polynomial
2. Zeroes and Coefficients of a Polynomial
3. Division Algorithm for Polynomials

1. **Monomials**: Algebraic expression with one term is known as Monomial.
2. **Binomial**: Algebraic expression with two terms is called Binomial.
3. **Trinomial**: Algebraic expression with three terms is known as Trinomial.
4. **Polynomials**: All above mentioned algebraic expressions are called Polynomials.
5. Polynomials of degrees 1, 2 and 3 are called linear, quadratic and cubic polynomials respectively.
6. A quadratic polynomial in x with real coefficient is of the form $ax^2 + bx + c$, where a, b, c are real numbers with a $\neq 0$.
7. The zeroes of a polynomial p(x) are precisely the x–coordinates of the points where the graph of y = p(x) intersects the x-axis i.e. x = a is a zero of polynomial p(x) if p(a) = 0.
8. A polynomial can have at most the same number of zeros as the degree of polynomial.
9. For quadratic polynomial $ax^2 + bx + c(a \neq 0)$

Sum of zeroes = $-\frac{b}{a}$

Product of zeroes = $\frac{c}{a}$

10. In a cubic polynomial $ax^3 + bx^2 + cx + d$, if α, β, γ are the zeroes of the polynomial, then

$\alpha + \beta + \gamma = \frac{-b}{a}$

$\alpha\beta + \beta\gamma + \gamma\alpha = \frac{c}{a}$

$\alpha.\beta.\gamma = \frac{d}{a}$

11. The division algorithm states that given any polynomial p(x) and polynomial g(x), there

are polynomials q(x) and r(x) such that :

$$p\left(x\right) \ = \ g\left(x\right).q\ \left(x\right)\ +\ r\left(x\right),\ \ g\left(x\right)\ \neq 0$$

where r(x) = 0 or degree of r(x) < degree of g(x).

Or   Dividend = Divisor x Quotient + Remainder

If r(x) = a zero polynomial, then p(x) is said to be completely divisible by g(x), i.e., g(x) is a factor of p(x).