Class 9 Mathematics - Chapter 2: Polynomials (Revision Questions)

Exercise 2.1 - Polynomials in One Variable

1. Identify the type of polynomial (monomial, binomial, trinomial, or not a polynomial):

   (a) 5x - 7

   (b) x^2 + sqrt2x + 1

   (c) 7

   (d) x^3 + x^2 + x + 1

2. Classify the expressions as polynomials or not in one variable:

   (a) x^2 + 2/x

   (b) sqrtx + 1

   (c) 3x^4 + 2x^3 - x + 7

3. Write the degree of each polynomial:

   (a) 4x^3 + x^2 - 1

   (b) 5a^2b + 3ab^2

   (c) 7y^4 - 2y + 9

   (d) 8

4. Write the coefficient of:

   (a) x^2 in 4x^2 + 2x - 5

   (b) x in -3x + 1

   (c) Constant term in 7x^2 - 3x + 6

Exercise 2.2 - Zeroes of a Polynomial

1. Find the zero of each linear polynomial:

   (a) p(x) = x + 5

   (b) p(x) = 3x - 9

   (c) p(x) = 2x + sqrt3

2. Check whether the given value is a zero of the polynomial:

(a) $p(x) = x^2 - 5x + 6$; check for $x = 2$

(b) $p(x) = x + 7$; check for $x = -7$

(c) $p(x) = 2x^2 - 3x + 1$; check for $x = 1$

3. Find the value of the polynomial at given values of x:

(a) $p(x) = x^2 + 2x + 1$; $x = -1$

(b) $p(x) = 3x^2 - x + 4$; $x = 0$

Exercise 2.3 - Factorisation Using Factor Theorem

1. Verify whether the given value is a zero, and hence factorise the polynomial:

(a) $p(x) = x^2 + 5x + 6$; check $x = -2$

(b) $p(x) = x^2 - 7x + 12$; check $x = 3$

2. Factorise the following quadratic polynomials:

(a) $x^2 - 5x + 6$

(b) $x^2 + 3x + 2$

(c) $x^2 - 2x - 8$

3. Factorise the following cubic polynomials by trial method (one root is given):

(a) $x^3 - 6x^2 + 11x - 6$; given one zero is 1

(b) $2x^3 + 3x^2 - 2x - 3$; given one zero is -1