

## Class IX. (Mathematics)

### I Previous knowledge required for chapter.1

- 1) Representation of natural numbers(class vi)integers (class vii) and rational numbers (class viii) on a number line
- 2) Laws of exponents with integral powers
- 3) Clusterness of rational numbers

### II Previous knowledge required for chapter 2

- 1) Definition of a polynomial in one variable with examples and counter examples, Terms of a polynomial ,co-efficient and constant in a polynomial
- 2) Algebraic expressions and identities (learnt in class viii)
  - i.  $(a+b)^2 = a^2 + b^2 + 2ab$
  - ii.  $(a-b)^2 = a^2 - 2ab + b^2$
  - iii.  $(a+b)(a-b) = a^2 - b^2$
  - iv.  $(x+a) \times (x+b) = x^2 + (a+b)x + ab$
- 3) Factorization of polynomials using identities.

### Assignment based on the above said Chapters

(\*Note –solve the assignment in A4-Size sheets)

#### ASSIGNMENT-1

- 1) Define the following
  - a) Natural numbers
  - b) Whole numbers
  - c) Integers
  - d) Rational numbers
- 2) Write rational numbers between.
  - a) 1 and 2
  - b)  $\frac{2}{3}$  and  $\frac{5}{3}$

- 3) Find five rational numbers between
- a)  $\frac{3}{5}$  and  $\frac{2}{3}$
- 4) Rational numbers between 1 and  $\frac{2}{3}$
- 5) Find four rational numbers between 1 and  $\frac{3}{5}$
- 6) Represent  $-\frac{3}{5}$  on a number line
- 7) Simplify
- a)  $6\frac{2}{5} \times 6\frac{3}{5}$
- b)  $6\frac{1}{2} \times 7\frac{1}{2}$
- c)  $\frac{5\frac{6}{7}}{2\frac{2}{3}}$
- 8) If  $(0.2)^n = 0.00032$  Find the value of 'n'
- 9) Prove that  $9^{\frac{3}{2}} - 3 \times 5^0 - \left(\frac{1}{81}\right)^{\frac{1}{2}} = 15$
- 10) If  $(343)^{\frac{1}{2}} = 49$  find 'n'

(Answers will be uploaded later)

## Assignment -2

1. Write the terms and the number of terms of the polynomials  $x^3+3x^2-2x+3$  .
2. Write the type of polynomials based on numbers of terms with one example each (monomial, trinomials.....)
3. Find the value of polynomial
  - a)  $x^2-2x^2+x$  at  $x=2$
  - b)  $3x^3-4x$  at  $x=-1$
4. Evaluate each of the following using Suitable identities
  - i.  $(3a+4b)^2$
  - ii.  $(3x-2y)^2$
  - iii.  $(a+0.1)x(a-0.1)$
  - iv.  $(a/2-b/5)^2$
  - v.  $(x-\sqrt{3}y)^2$
5. Evaluate each of the following using suitable identities.
  - I.  $107 \times 93$
  - II.  $(0.97)^2$
  - III.  $105 \times 95$
  - IV.  $95 \times 95 - 85 \times 85$
6. Factorise the following polynomials
  - a)  $36x^2 - 49$
  - b)  $Y^2+10y+25$
7. Write the co-efficient of  $x^2$  in each of the following
  - a)  $\pi/6 + x^2 - 1$
  - b)  $3x - 5$
  - c)  $(x-1)(3x-4)$
  - d)  $(2x-5)(2x^2 - 3x + 1)$
8. Factorize
  - I)  $4x^2+20x+25$
  - II)  $9y^2-66yz+121z^2$
  - III)  $X^4-y^4$

(Answers will be uploaded later)