

## Chapter 4 (Objectives)

### Quadratic equations

TEXTBOOK OF ALGEBRA AND TRIGONOMETRY FOR CLASS XI

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#### Fill in the blanks.

1. A quadratic equation in  $x$  can be written in form .....
  2. Another name for quadratic equation in  $x$  is ..... in  $x$ .
  3. The solutions of an equation are also called its .....
  4. Quadratic formula is given by .....
  5. Equation in which variable occurs in exponent are called .....
  6. An equation which remains unchanged when  $x$  (variable) replaced by (reciprocal of variable)  $1/x$ , is called a .....
  7. Equations involving ..... of the variable are called radical equation.
  8. The extra solutions of an equation are called .....
  9.  $\omega$  and  $\omega^2$  are called ..... cube roots of unity.
  10. Each complex cube root of unity is ..... of other.
  11. Sum of all three cube roots of unity is .....
  12.  $1 + \omega + \omega^2 =$  .....
  13. The product of all three cube roots of unity is .....
  14.  $\omega^{-12} =$  .....
  15.  $\omega^{27} =$  .....
  16.  $\omega^{11} =$  .....
  17. Four fourth roots of unity are .....
  18. Sum of all four fourth roots of unity is .....
  19. The real fourth roots of unity are ..... of each other
  20. Both complex fourth roots of unity are ..... of each other.
  21. Product of all fourth roots of unity is .....
  22. The highest power of  $x$  in polynomial of  $x$  is called ..... of polynomial.
  23. Degree of  $x^3 + 2x^2 + 4$  is .....
  24. Dividend = (divisor)( ..... ) + remainder
  25. Remainder obtained when  $f(x)$  is divided by ..... is same as value of polynomial  $f(x)$  at  $x = a$ .
  26.  $(x - a)$  is a factor of  $f(x)$  if .....
  27. Sum of roots of quadratic equation = .....
  28. Product of roots of quadratic equation = .....
  29. The nature of roots of an equation depends on value of .....
  30. Value of Discriminate is .....
  31. If  $b^2 - 4ac = 0$ , roots are ..... and .....
  32. If  $b^2 - 4ac \neq 0$ , roots are .....
  33. If  $b^2 - 4ac > 0$ , roots will be ..... and unequal.
  34. If  $b^2 - 4ac < 0$ , roots will be ..... and unequal.
  35. If  $b^2 - 4ac$  is perfect square, the roots are .....
  36. If  $b^2 - 4ac$  is not perfect square, the roots are .....
  37. Two quadratic equations in which  $xy$  term is missing and co-efficient  $x^2$  and  $y^2$  are equal give a linear equation by .....
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# Ñ KEY

01-  $ax^2 + bx + c = 0$

02-  $2^{\text{nd}}$  degree polynomial

03- roots

04-  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

05-  $a^2 + b^2 - 2ab \cos \gamma$ .

06-  $\frac{b^2 + c^2 - a^2}{2bc}$

07- Law of tangent

08-  $\sqrt{\frac{(s-c)(s-a)}{ca}}$

09-  $\cos \frac{\gamma}{2}$

10-  $\Delta = \sqrt{s(s-a)(s-b)(s-c)}$

11- Circum circle

12- Circum radius

13-  $R = \frac{a}{2 \sin \alpha}$

14-  $R$  (Circum radius)

15- Inscribe circle or in-circle

16- In-centre

17-  $r = \frac{\Delta}{s}$

18- Escribed circle, ex-circle

19- ex-centres

20-  $\frac{\tan \frac{\gamma-\alpha}{2}}{\tan \frac{\gamma+\alpha}{2}}$

21-  $\sqrt{\frac{s(s-c)}{ab}}$

## The End

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