QUADRATIC EQUATIONS

1] The solutions for the equations $x + y = 10$ and $x - y = 2$ are

   A] $x = 6$ B] $x = 4$ C] $x = 7$ D] $x = 9$

   $\quad y = 4$ $\quad y = 6$ $\quad y = 3$ $\quad y = 2$

2] One root of the equation $x^2 - 5x + k = 0$ is 2. Then k is:

   A] -6   B] 6   C] -5   D] 5

3] If the discriminant of quadratic equation $b^2 - 4ac = 0$ then the roots are:

   A] Real and distinct   B] Roots are equal

   C] No real roots   D] Roots are unequal and irrational

4] The roots of the quadratic equation $x^2 - 5x - 6 = 0$ are:

   A] -3 and -2 B] 3 and 2   C] 6 and -1 D] -6 and 1

5] The roots of the quadratic equation $ax^2 + bx = 0$ are:

   A] $0, -\dfrac{b}{a}$ B] $0, +\dfrac{b}{a}$ D] $+\dfrac{b}{a}, -\dfrac{b}{a}$ D] $-\dfrac{b}{a}, -\dfrac{b}{a}$

6] If $4x = \dfrac{81}{x}$, then the value of x is:

   A] -4.5   B] ±4.5 C] 4.5   D] ±0.45

7] In the equation $ax^2 + bx + c = 0$, if one root is negative of the other, then:

   A] $a = 0$ B] $b = 0$ C] $c = 0$ D] $a = c$

8] If one of the roots of the equation $x^2 - 5x = 0$ is zero , then the other root is:

   A] 0   B] -5   C] 5   D] ± 5

9] If $4a = \dfrac{36}{a}$, the value of a is

   A] ± 9 B] ± 3 C] +3   D] -3

10] The roots of a quadratic equation $2k^2 - 2k - 5 = 0$, when the values of the coefficient a, b and c are being substituted in the formula are:

   A] $k = \dfrac{-(-2)\pm\sqrt{(-2)^2 - 4(2)(5)}}{2}$ B] $k = \dfrac{-2\pm\sqrt{(-2)^2 - 4(2)(-5)}}{2(2)}$

   C] $k = \dfrac{-(-2)\pm\sqrt{(-2)^2 - 4(2)(-5)}}{2(2)}$ d] $k = \dfrac{2\pm\sqrt{(2)^2 - 4(2)(5)}}{2(2)}$

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11] The graph of $y = x^2$ and $y = 2 - x$ intersects at (1,1) and (-2,4), then the roots of required quadratic equation are:

      A] 2 and 2   B] 1 and -2   C] 0 and -2   D] 0 and 4

12] If $a^2 = b^2 + c^2$, then c is given by:

      A] $\pm \sqrt{b^2 + a^2}$ B] $\pm \sqrt{a^2 + b^2}$ C] $\pm \sqrt{a - b}$ D] $\pm \sqrt{a^2 - b^2}$

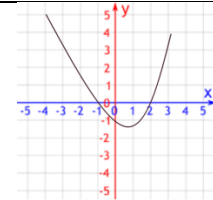13] One of the positive roots of the equation $(2x - 7)(3x - 5) = 0$ is:

      A] $\frac{7}{2}$ B] $\frac{2}{7}$ C] $\frac{3}{5}$ D] $\frac{5}{7}$

14] Value of x in the equation $px^2 + qx + r = 0$ is:

      A] $\frac{-p \pm \sqrt{p^2 - 4pq}}{2p}$ B] $\frac{-q \pm \sqrt{q^2 - 4pr}}{2p}$ C] $\frac{-q \pm \sqrt{r^2 - 4pq}}{2r}$ D] $\frac{-q \pm \sqrt{p^2 - 4pq}}{2q}$

15] The roots of the quadratic equation solved in the graph are:

      A] +2, -1   B] -2, +1

      C] +2, +1   D] -2, -1

16] The sum of the roots of the quadratic equation $ax^2 + bx + c = 0$ is:

      A] $\frac{c}{a}$ B] $\frac{b}{a}$ C] $-\frac{b}{a}$ D] $\frac{a}{c}$

17] The product of two consecutive natural numbers is 12. The form of this statement is:

      A] $x^2 + 2x - 12 = 0$ B] $x^2 + x - 12 = 0$ C] $x^2 + x + 12 = 0$ D] $x^2 + 2x + 12 = 0$

18] The pure quadratic equation in the following is:

      A] $x + \frac{1}{x} = 4$ B] $x + \frac{1}{x} = 0$ C] $x - \frac{3}{4} = 2x$ D] $3x(x - 1) = 0$

19] The quadratic equation having the roots $(1 + \sqrt{2})$ and $(1 - \sqrt{2})$ is:

      A] $x^2 + 2x + 1 = 0$ B] $x^2 + 2x - 1 = 0$ C] $x^2 - 2x - 1 = 0$ D] $x^2 - 2x + 1 = 0$

20] $x + \frac{1}{x} = 3$ is in the form of:

      A] Adfected quadratic equation   B] Pure quadratic equation

      C] Linear equation   D] Simple equation

21] Which one of the following in not a pure quadratic equation?

      A] $x^2 + 2 = 6$ B] $2m^2 = 72$ C] $p^2 = 9$ D] $K^2 = K$

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22] If a and b are the roots of the equation $x^2 - 5x + 7 = 0$, then the value of ab(a + b) is:

        A] 5   B] 25   C] 35   D] 49

23] The sum of a number and twice its square is 78. The correct from of its equation is:

        A] $x + 2x^2 = 78$ B] $x + (2x)^2 = 78$ C] $x + 2x = 78$ D] $x^2 + (2x)^2 = 78$

24] The sum of the roots of the quadratic equation $2x^2 = 6x - 5$ is:

        A] $\frac{1}{3}$ B] $\frac{5}{2}$ C] $\frac{-5}{2}$ D] 3

25] The quadratic equation whose roots are 1 and -1 is:

        A] $ax^2 - x - 1 = 0$ B] $ax^2 - 1 = 0$ C] $x^2 = 1$ D] $x^2 + 1 = 0$

26] In a quadratic equation $ax^2 + bx + c = 0$, if a = 0, then it becomes:

        A] Pure quadratic equation   B] Adfected quadratic equation
        C] Simple linear equation   D] Second degree equation

27] The sum of a number and its square is 42. It represents the equation:

        A] $x^2 + x + 42 = 0$ B] $x^2 + x - 42 = 0$ C] $2x^2 + x - 42 = 0$ D] $x^2 - x - 42 = 0$

28] When $2m^2 = 2 - m$ is written in the standard form, then quadratic equation becomes:

        A] $2m^2 + m - 2 = 0$ B] $2m^2 - m - 2 = 0$ C] $2m^2 - m + 2 = 0$ D] $2m^2 + m + 2 = 0$

29] If m and n are roots of a quadratic equation, then the standard form of quadratic equation is:

        A] $x^2 + (m + n)x + mn = 0$ B] $x^2 - (m + n)x - mn = 0$
        C] $x^2 + (m - n)x + mn = 0$ D] $x^2 - (m + n)x + mn = 0$

30] If m and n are roots of equation $2x^2 - 6x + 1 = 0$, then the value of $m^2n + mn^2$ is:

        A] $\frac{3}{2}$ B] $\frac{2}{3}$ C] $-\frac{3}{2}$ D] $\frac{1}{2}$

31] Sum of a number and its reciprocal is $5\frac{1}{5}$. Then the required equation is:

        A] $y^2 + \frac{1}{y} = \frac{26}{5}$ B] $5y^2 - 26y + 5 = 0$

        C] $y^2 + \frac{1}{y} + \frac{26}{5} = 0$ D] $5y^2 + 26y + 5 = 0$

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32] In the equation $ax^2 + bx + c = 0$, if $b = 0$, then the equation is:

    A] Adfected quadratic equation   B] Pure quadratic equation

    C] Linear equation   D] Simultaneous equation

33] The length of a rectangle is 4cm more than the breadth. The area is 60 sq.cm. This can be represented as:

    A] $x + (x+4) = 60$ B] $x+(x+4) – 60 = 0$ C] $(x+4)x + 60 = 0$ D] $(x+4)x – 60 = 0$

34] If the sum of the roots of a quadratic equation is -5 and the product is 4, then the equation is:

    A] $x^2 + 5x + 4 = 0$ B] $x^5 - 5x + 4 = 0$ C] $x^2 + x + 20 = 0$ D] $x^2 - x – 20 = 0$

35] The product of the roots of the equation $x^2 + 5x + (k + 4) = 0$ is zero, then k is equal to

    A] -5   B] -4   C] 4   D] 5

36] The quadratic equation among the following is:

    A] $a^3 + 3 = 2a$ B] $x + 5 = 10$ C] $x + 4(x+1) = 0$ D] $y = \dfrac{2}{y}$

37] The sum and product of the roots of the quadratic equation $4x^2 + 1 = 0$ are respectively.

    A] 1 and 4   B] 0 and 1   C] 0 and $-\dfrac{1}{4}$ D] 0 and $\dfrac{1}{4}$

38] The hypotenuse of a right angled triangle is 13cm. if one side of the remaining is 5 cm greater that the Other, they can be related with each other as:

    A] $x + (x + 5) = 13$ B] $x^2 + (x^2 + 5) = 13^2$

    C] $x^2 + (x + 5)^2 = 13^2$ D] $x^2 + (x - 5)^2 = 13^2$

39] If the roots of a quadratic equation are 0 and $-\dfrac{1}{2}$, the equation is :

    A] $2x^2 + x = 0$ B] $x2 + \dfrac{1}{2}$ C] $2x^2 + 1 = 0$ D] $2x^2 - x = 0$

40] Twice the square of a number added to three times the number is equal to 65. This statement in the form of equation is:

    A] $3x^2 + 2x = 65$ B] $2x^2 + 3x = 65$ C] $2x^2 + 3x^2 = 54$ D] $3x^2 + 2x^2 + 65$

41] The roots of an equation are +2 and -2, then the equation is a / an:

    A] Adfected quadratic equation   B] Linear equation

    C] Simple linear equation   D] Pure quadratic equation

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42] The height of triangle is 4 cm more than the base. Its area is 30 sq cm. this relation can be represented as:

A] x(x+4) = 30   B] 2x(x+4) = 40   C] x(x+4) = 15   D] x(x+4) = 60

43] If an equation has only one root, then the equation is:

A] Quadratic equation   B] Linear equation

C] Cubic equation   D] Simultaneous equation

44] If m and n are the roots of the equation $x^2 - 6x + 2 = 0$, then the value of $\frac{1}{m} + \frac{1}{n}$ is

A] 6   B] 1.5   C] 3   D] 2

45] The quadratic equation whose roots are $\left(3 \pm \sqrt{5}\right)$ is:

A] $x^2 - 6x + 4 = 0$ B] $x^2 - 3x + 5 = 0$ C] $x^2 + 3x - 5 = 0$ D] $x^2 + 6x + 4 = 0$

46] The sum and product of the roots of the equation $2x^2 = 3x$, respectively are:

A] $\frac{3}{2}$ and 0   B] 0 and $\frac{3}{2}$ C] $+\frac{15}{2}$ and 0   D] 0 and $-\frac{15}{2}$

47] If the product of the roots of the equation $x^2 + 3x + q = 0$ then q is equal to:

A] 1   B] 2   C] 3   D] 0

48] Parabola is a curve obtained from:

A] Linear equation   B] Cubic equation   C] Quadratic equation   D] Simultaneous equation

49] If m and n are the roots of the quadratic equation $x^2 - 6x + 2 = 0$, then the value of $(m+n)^2$ is:

A] 36   B] -36 C] 2   D] -2

50] If $ax^2 + bx + c = 0$ has equal roots. Then c is equal to:

A] $\frac{b^2}{4a}$ B] $\frac{b^2}{2a}$ C] $\frac{b^2}{a}$ D] $-\frac{b^2}{4a}$

51] The value of p for the equation $x^2 - px + 9 = 0$ to have equal roots is:

A] +6   B] ±6 C] -6   D] ±13

52] The value of the discriminant of the equation $4x^2 - 4x + 1 = 0$ is:

A] -8 B] -12 C] 32   D] 0

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53] The nature of the roots of the equation $ax^2 + bx + c = 0$ is decided by :

A] $b^2 - 4ac$ B] b2 + 4ac   C] $b - 4ac$ D] $b + 4ac$

54] The discriminant of the quadratic equation $ax^2 + bx + c = 0$ is :

A] $-\frac{b}{a}$ B] $b^2 - 4ac$ C] $\frac{c}{a}$ D] $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

55] If the roots of the quadratic equation $x^2 + 4x + c = 0$ is equal, then the value of c is:

A] 3   B] 4   C] 5   D] 12

56] If the roots of the quadratic equation $mx^2 + 6x + 1 = 0$ are equal, then the value of m is:

A] 6   B] 1   C] 9   D] 5

57] In a quadratic equation, if the value of $b^2 - 4ac = -7$, the nature of the roots of the quadratic equation is:

A] Real and equal   B] Real and distinct

C] Imaginary   D] Negative numbers

58] If the roots of equation $x^2 - mx + 16 = 0$ are equal, then the value of m is:

A] ± 4 B]] ± 16 C]] ± 2 D]] ± 8

59] Roots of the equation $x^2 - 2x + 1 = 0$ are:

A] Not real   B] Distinct   C] Equal   D] Zero

60] Value of discriminant factor in the equation $2x^2 = 5x$ is:

A] 27   B] 25   C] 23   D] 10

61] The nature of the roots of the equation $x^2 - 6x + 9 = 0$ is:

A] Real and rational   B] Real and irrational

C] Equal   D] Complex

62] If the roots of quadratic equation are real and distinct, then which of the following is correct?

A] $\Delta > 0$ B] $\Delta < 0$ C] $\Delta = 0$ D] $\Delta \leq 0$

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