Equations

1) An equation of the form $ax^2 + bx + c = 0$ is called

A) Quadratic
B) Cubic
C) Bi-quadratic
D) Linear

2) In the quadratic equation $ax^2 + bx – c = 0$ the sum of roots is

A) $– b/c$
B) $– b/a$
C) $– c/a$
D) a/c

3) In the quadratic equation $ax^2 – bx + c = 0$ the product of roots is

A) c/a
B) b/a
C) a/c
D) $– c/a$

4) The sum of cube roots of unity is

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

5) The roots of a quadratic equation $ax^2 + bx + c = 0$ are

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

6) The product of cube root of unity is

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

7) The number of real roots in cube roots of unity are

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

8) The roots of quadratic equation $ax^2 – bx – c = 0$ are real if

A) $b^2 + 4ac \leq 0$
B) $b^2 – 4ac < 0$
C) $b^2 + 4ac \geq 0$
D) $b^2 – 4ac = 0$

9) The roots of quadratic equation $ax^2 + bx – c = 0$ are equal if

A) $b^2 – 4ac < 0$
B) $b^2 + 4ac \geq 0$
C) $b^2 + 4ac = 0$
D) $b^2 – 4ac = 0$

10) The roots of quadratic equation $ax^2 – bx – c = 0$ are imaginary if

A) $b^2 + 4ac < 0$
B) $b^2 – 4ac \geq 0$
C) $b^2 + 4ac = 0$
D) $b^2 – 4ac = 0$

11) If 4 & - 5 are the roots, then quadratic equation will be

A) $x^2 – x – 20 = 0$
B) $x^2 – x + 20 = 0$

C) $x^2 + x - 20 = 0$
D) $x^2 + x + 20 = 0$

12) The value of ω^{12} is
A) 1
B) ω
C) ω^2
D) 0

13) The square of a number when added to the number results in 6 then the number is
A) 2
B) – 2
C) –3
D) Both A & C

14) The sum of roots of $3x^2 - 4x + 7 = 0$ is
A) 4/3
B) 7/3
C) –7/3
D) –4/3

15) The product of roots of $3x^2 + 5x - 2 = 0$ is

A) 5/3
B) 3/5
C) –2/5
D) –2/3

16) If $3^{1+x} + 5.3^x - 8 = 0$, then x =

A) 8
B) 5
C) 3
D) 0

17) If $\sqrt{2x+1} + \sqrt{x} = 5$ then x =

A) 5
B) 4
C) 3
D) 2

18) If $\sqrt{5x-1} - \sqrt{2x} = 1$ then x =

A) 3
B) 2
C) 1
D) 5

19) If $\frac{\sqrt{2x+1} - \sqrt{x}}{\sqrt{2x+1} + \sqrt{x}} = \frac{1}{5}$, then x =

A) 1
B) 2
C) 3
D) 4

20) If one root of quadratic equation is 4 + 5i, then equation

A) $x^2 - 8x + 41 = 0$
B) $x^2 + 8x + 41 = 0$
C) $x^2 - 41x + 8 = 0$
D) $x^2 - 41x - 8 = 0$

21) In the quadratic equation $x^2 - 9 = 0$, the sum of the root is

A) 9
B) –9
C) 1/9
D) 0

22) In the quadratic equation $3x^2 - 5x = 0$, the product of root is

A) 5/3
B) –5/3
C) 0
D) 3/5

23) The roots of quadratic equation $x^2 - 4x = 0$ are

A) Imaginary
B) Rational & Different
C) Irrational
D) Rational & Equal

24) Ifω, ω^2 are complex cube roots of unity Then $\omega + \omega^2$ =

A) 1
B) –1
C) 0
D) none of these

25) If ω, ω^2 are complex cube roots of unity then ω^2 =

A) $1/\omega$
B) $-\omega$
C) $-1/\omega$
D) none of these

26) $\left(\frac{-1+\sqrt{-3}}{2}\right)^4+\left(\frac{-1-\sqrt{-3}}{2}\right)^4$ =

A) 0
B) 1
C) –1
D) 4

27) If ω and ω^2 are cube roots of unity then $(1 - \omega - \omega^2)^5$ =

A) 0
B) 1
C) 32
D) None of these

28) If the area of a rectangle is 56 & the length is one more than the breadth then the dimensions are

A) –8, -7
B) 8, 7
C) 14, 4
D) 28, 2

29) The sides of a right angle triangle are 2x + 1, 2x,
2x – 1, then x is

A) –1
B) ½
C) –2
D) 2

30) If one root of $4x^2 + 7hx – h^2 + 9 = 0$ is zero then h =

A) 0
B) 3
C) –3
D) ± 3

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