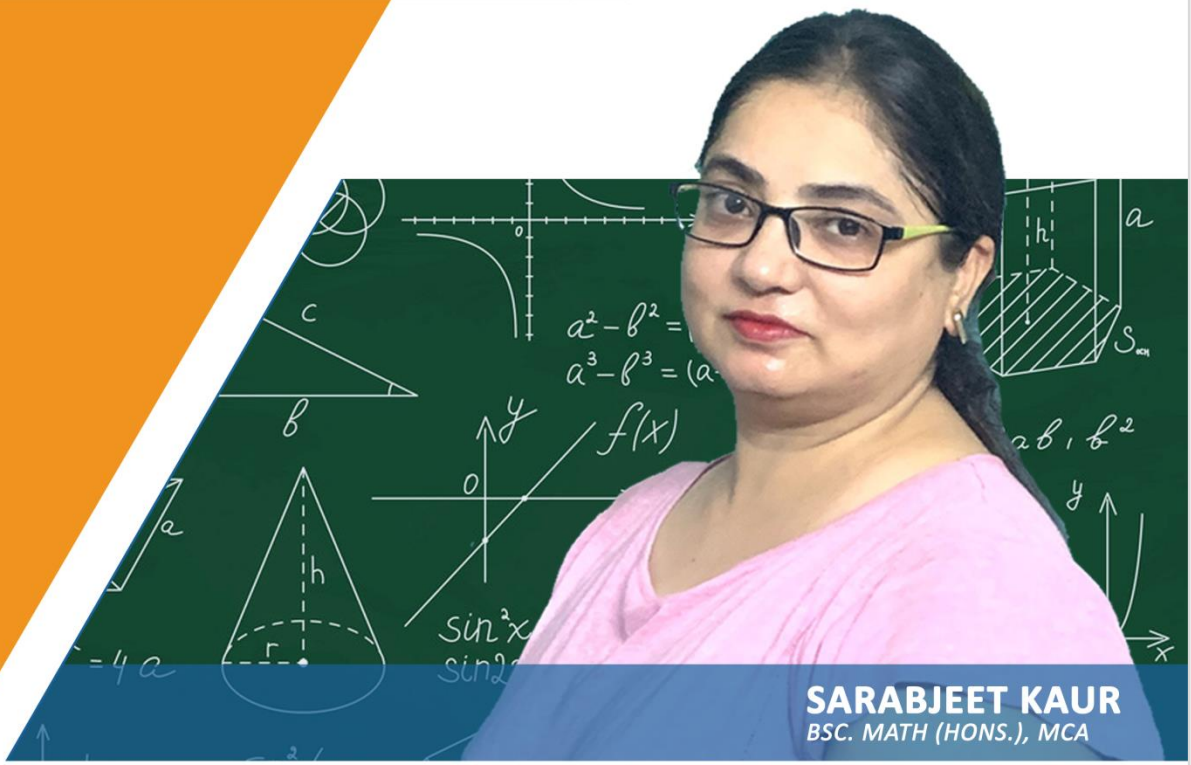
CAREER+ ACADEMY



SARABJEET KAUR
BSC. MATH (HONS.), MCA

GRADE 11TH MATHS

CHAPTER 5

Complex Numbers

www.careerplusacademy.com careerplusacademy@gmail.com

/careerplusacademy /in/sarabkaur /careerplusacademy +91-987-111-5373

For Online Tutorials, Subscribe /careerplusacademy

1. Value of i(iota) is _____

a) -1

b) 1

c) (-1)1/2

d) (-1)1/4

2. Is i(iota) a root of $1+x^2=0$?

a) True

b) False

3. In z=4+i, what is the real part?

a) 4

b) i

c) 1

d) 4+i

4. In z=4+i, what is imaginary part?

a) 4

b) i

c) 1

d) 4+i

5. (x+3) + i(y-2) = 5+i2, find the values of x and y.

a) x=8 and y=4

b) x=2 and y=4

c) x=2 and y=0

d) x=8 and y=0

6. If z1 = 2+3i and z2 = 5+2i, then find sum of two complex numbers.

a) 4+8i

b) 3-i

c) 7+5i

d) 7-5i

7. 0+0i is _____for complex number z.

a) additive inverse

b) additive identity element

c) multiplicative identity element

d) multiplicative inverse

8. 1+0i is _____ for complex number z.

a) additive inverse

b) additive identity element

c) multiplicative identity element

d) multiplicative inverse

9. -z is _____ for complex number z.

a) additive inverse

b) additive identity element

c) multiplicative identity element

d) multiplicative inverse

10. 1/z is _____ for complex number z.

a) additive inverse

b) additive identity element

c) multiplicative identity element

d) multiplicative inverse

11. If z1 = 2+3i and z2 = 5+2i, then find z1-z2.

a) -3+1i

b) 3-i

c) 7+5i

d) 7-5i

12. z1=1+2i and z2=2+3i. Find z1z2.

a) 2+6i

b) -4+0i

c) -4+7i

d) 8+7i

13. i^2 =_____

a) 1

b) -1

c) i

d) -i

14. i^7 =_____

a) 1

For Online Tutorials, Subscribe /careerplusacademy

b) -1

c) i

d) -i

15. i^{241} =_____

a) 1

b) -1

c) i

d) -i

16. Square roots of -7 are_____

a) 7i and -7i

b) 7–√ i

c) –7–√ i

d) 7–√ i and –7–√ i

17. (-i) (8+5i) =_____

a) 8+5i

b) -8-5i

c) -5-8i

d) 5-8i

18. $(2-i)^3$ =_____

a) 2-3i

b) 8-i

c) 2-11i

d) 2+11i

19. Is $zxz^{-1} = |z|^2$?

a) True

b) False

20. Find multiplicative inverse of 3+5i.

a) 87+145i

b) 87-145i

c) 145-87i

d) 145+87i

21. i^{-35} =_____

a) 1

b) -1

c) i

d) -i

22. Which axis is known as real axis in argand plane?

a) x-axis

b) y-axis

c) z-axis

d) any axis

23. Which axis is known as imaginary axis in argand plane?

a) x-axis

b) y-axis

c) z-axis

d) any axis

24. 2+i0 is point on _____

a) x-axis

b) y-axis

c) z-axis

d) any axis

25. 6i is point on _____

a) x-axis

b) y-axis

c) z-axis

d) any axis

26. $\sqrt{(x^2+y^2)}$ distance of point representing complex number x+y i from origin.

a) True

b) False

27. Find mirror image of point representing x+i y on real axis.

a) (x, y)

b) (-x, -y)

c) (-x, y)

d) (x, -y)

28. Find mirror image of point representing x+i y on imaginary axis.

a) (x, y)

b) (-x, -y)

c) (-x, y)

d) (x, -y)

29. If P and Q are conjugate complex numbers then their points on argand plane are mirror image on _____

a) x-axis

b) y-axis

c) z-axis

d) any axis

30. In polar representation of a complex number (r, 2π) lies on _____

a) x-axis

b) y-axis

c) z-axis

d) any axis

31. In polar representation of a complex number (r, π/2) lies on _____

a) x-axis

b) y-axis

c) z-axis

d) any axis

32. Convert (8, 2π/3) into Argand plane representation.

a) (-4, 4√3)

b) $(4, 4\sqrt{3})$

c) $(4\sqrt{3}, 4)$

d) $(-4\sqrt{3}, 4)$

33. Convert -1+i into polar form.

a) $\sqrt{2}, 5\pi/4$

b) $\sqrt{2}, 3\pi/4$

c) $-\sqrt{2}, \pi/4$

d) $\sqrt{2}, \pi/4$

34. Convert -1-i into polar form.

a) $\sqrt{2}, 5\pi/4$

b) $\sqrt{2}, 3\pi/4$

c) $\sqrt{2}, -3\pi/4$

d) $\sqrt{2}, \pi/4$

Problems Based on Quadratic Equation

1. Roots of a quadratic equation are real when discriminant is _____

a) zero

b) greater than zero

c) less than zero

d) greater than or equal to zero

2. Roots of a quadratic equation are imaginary when discriminant is _____

a) zero

b) greater than zero

c) less than zero

d) greater than or equal to zero

3. Solve $x^2+1 = 0$.

a) x=1, -1

b) x=i, -i

c) x=-1

d) x=i

4. Solve $2x^2 + x + 1 = 0$.

a) $\frac{-1\pm i\sqrt{7}}{4}$
b) $\frac{1\pm i\sqrt{7}}{4}$
c) $\frac{1\pm\sqrt{7}}{4}$
d) $\frac{-1\pm\sqrt{7}}{4}$

5. Solve $-x^2 + x - 2 = 0$.

a) $\frac{-1\pm i\sqrt{7}}{2}$
b) $\frac{1\pm i\sqrt{7}}{2}$
c) $\frac{1\pm\sqrt{7}}{2}$
d) $\frac{-1\pm\sqrt{7}}{2}$

6. Solve $2x^2+\sqrt{2}x+2= 0$.

a) $\frac{-1\pm i\sqrt{7}}{2\sqrt{2}}$
b) $\frac{1\pm i\sqrt{7}}{2\sqrt{2}}$
c) $\frac{1\pm\sqrt{7}}{2\sqrt{2}}$
d) $\frac{-1\pm\sqrt{7}}{2\sqrt{2}}$

For Online Tutorials, Subscribe /careerplusacademy

7. Solve $\sqrt{3}x^2 + x + \sqrt{3} = 0$

a) $\frac{-1 \pm i\sqrt{11}}{6\sqrt{3}}$

b) $\frac{1 \pm i\sqrt{11}}{6\sqrt{3}}$

c) $\frac{1 \pm \sqrt{11}}{6\sqrt{3}}$

d) $\frac{-1 \pm \sqrt{11}}{6\sqrt{3}}$

8. Solve $\sqrt{3}x^2 - \sqrt{2}x + 3\sqrt{3} = 0$

a) $\frac{-1 \pm i\sqrt{17}}{2}$

b) $\frac{1 \pm i\sqrt{17}}{2}$

c) $\frac{1 \pm \sqrt{17}}{2}$

d) $\frac{-1 \pm \sqrt{17}}{2}$

/careerplusacademy
/careerplusacademy