

CBSE Test Paper 02
CH-05 Complex & Quadratic

Section A

1. The inequality $|z - 6| < |z - 2|$ represents the region given by
 - a. $\operatorname{Re}(z) > 4$
 - b. $\operatorname{Re}(z) < 2$
 - c. none of these
 - d. $\operatorname{Re}(z) > 2$

2. Find Argument of the complex number $(0 + 0i)$
 - a. $-\pi$
 - b. π
 - c. none of these
 - d. 0

3. The least value of n for which $\left(\frac{1+i}{1-i}\right)^n$ is a positive integer is
 - a. 8
 - b. 1
 - c. 2
 - d. 4

4. If z is any complex number, then $\frac{z-\bar{z}}{2i}$ is
 - a. either 0 or purely imaginary
 - b. purely imaginary

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- c. purely real
- d. none of these
5. The points $z = x + iy$ which satisfy the equation $|z| = 1$ lie on
- the line $x = 1$
 - the line $y = 1$
 - the line $x + y = 1$
 - the circle whose centre is origin and radius = 1
6. Fill in the blanks:
- The roots of the equation $x^2 + 4 = 0$ are _____.
7. Fill in the blanks:
- $5(\cos 270^\circ + i \sin 270^\circ)$ is written in cartesian form as _____.
8. Evaluate $\frac{1}{i^7}$.
9. Express $(5 + 4i) + (5 - 4i)$ in the form of $a + ib$.
10. Solve the inequalities: $2 \leq 3x - 4 \leq 5$
11. If z_1, z_2 and z_3, z_4 are two pairs of conjugate complex numbers, then find $\arg\left(\frac{z_1}{z_4}\right) + \arg\left(\frac{z_2}{z_3}\right)$.
12. If $\arg(z - 1) = \arg(z + 3i)$, then find $x - 1 : y$.
13. Find the square root of $3 - 4\sqrt{7}i$
14. Find the real numbers x and y if $(x - iy)(3 + 5i)$ is the conjugate of $-6 - 24i$.
15. Express the complex number $3(\cos 300^\circ - i \sin 30^\circ)$ in polar form.