

Class 11: Complex Numbers and Linear Inequality

Test 1 - 2027

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Duration: 60 mins

Maximum Marks: 35

2 marks Questions

1. Find the conjugate of $\frac{1}{(4+2i)^2}$
2. Solve $|x - 1| - |x - 2| > 10$

3 marks Questions

3. If $\left(\frac{1+i}{1-i}\right)^3 - \left(\frac{1-i}{1+i}\right)^3 = x + iy$, then find x,y.
4. If $a = \cos B + i \sin B$ then find the value of $\left(\frac{1+a}{1-a}\right)$.
5. $-5 \leq \frac{2-3x}{4} \leq 9$
6. If $\frac{z-1}{z+1}$ is a purely imaginary and $z \neq -1$, then find the value of $|z|$.
7. A company manufactures cassettes. Its cost and revenue functions are $C(x) = 26000 + 30x$ and $R(x) = 43x$, respectively, where x is the number of cassettes produced and sold in a week How many cassettes must be sold by the company to realise some profit?

4 Marks Questions

8. The longest side of a triangle is twice the shortest side and the third side is 2 cm longer than the shortest side. If the perimeter of the triangle is more than 166 cm then find the minimum length of the shortest side.
9. $\frac{2x+1}{7x-1} > 5$, $\frac{x+7}{x-8} > 2$
10. Find the complex number satisfying the equation $z + \sqrt{2}|z + 1| + i = 0$
11. Let x and y be real numbers such that $50\left(\frac{2x}{1+3i} - \frac{y}{1-2i}\right) = 31 + 17i$, then find the value of $10(x - 3y)$.

[Solution of Test](#)

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