Chapter-2 Complex Number

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$PASSAGE - 1$

Let A,B,C be three sets of complex number as defined below

$A = \{z : Imz \geq 1\}$

$B = \{z : |z - 2 - \iota| = 3\}$

$C = \{z : Re((1 - \iota)z) = \sqrt{2}\}$

1) The number of element in the set$A \cap B \cap C$ is (2008)

   $(a)\,0$ $(b)\,1$ $(c)\,2$ $(d)\,\infty$

2) Let z be any point in$A \cap B \cap C$ Then,$|z + 1 - \iota|^2 + |z - 5 - \iota|^2$ lies between (2008)

   (a) 25 and 29 (b) 30 and 34

   (c) 35 and 39 (d)40 and 44

3) Let z be any point A B C and let w be any point satisfying $|w - 2 - \iota| < 3$.Then, $|z| - |w| + 3$ lies between (2008)

   (a) -6 and 3 (b) -3 and 6

   (c) -6 and 6 (d) -3 and 9