**1)**  Let is purely imaginary . Then the sum of the elements in is

**[JEE Main 2023 (Online) 8th April Evening Shift]**

**A)**

**B)**

**C)**

**D)**

**2)** Let the complex number be such that is purely imaginary. If , then is equal to:

**[JEE Main 2023 (Online) 10th April Morning Shift]**

**A)**

**B)**

**C)**

**D)**

**3)** Let . Then which of the following is NOT correct?

**[JEE Main 2023 (Online) 10th April Evening Shift]**

**A)**

**B)**

**C)**

**D)**

**4)** Let be the point obtained by the rotation of about the origin through a right angle in the anticlockwise direction, and be the point obtained by the rotation of about the origin through a right angle in the clockwise direction. Then the principal argument of is equal to

**[JEE Main 2023 (Online) 11th April Morning Shift]**

**A)**

**B)**

**C)**

**D)**

**Numerical Question**

**5)** Let . If , then  
  
 is equal to \_\_\_\_\_\_\_\_\_.

**[JEE Main 2023 (Online) 11th April Evening Shift]**