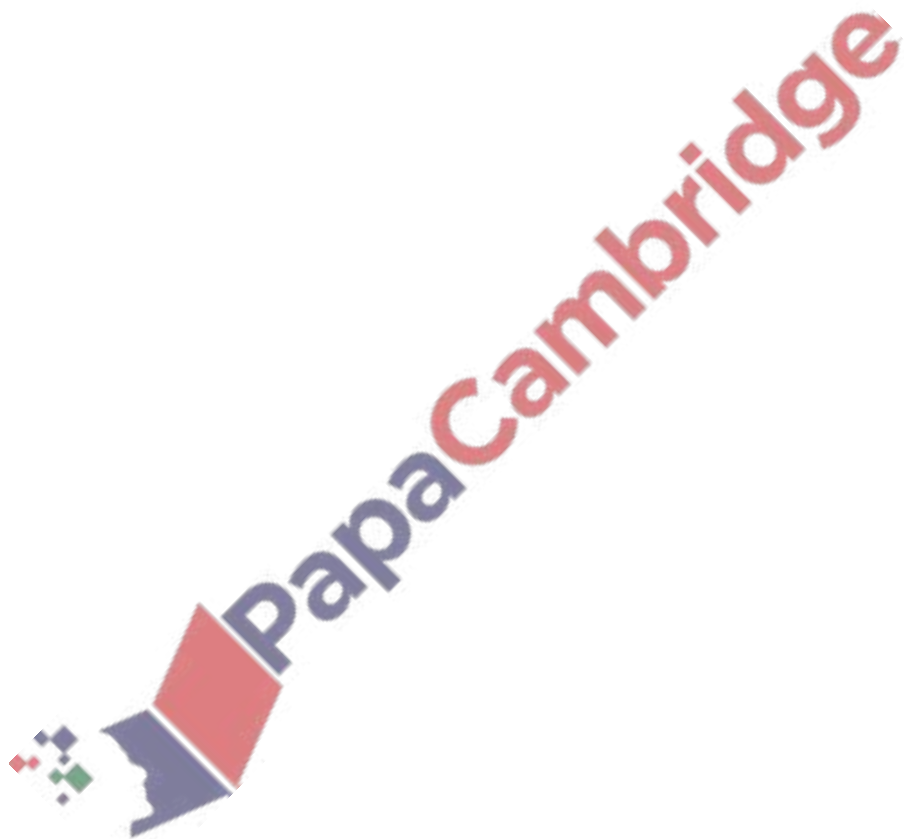


Complex Numbers – 2022 A2 June

1. *March/2022/Paper_9709/32/No.2*

On a sketch of an Argand diagram, shade the region whose points represent complex numbers z satisfying the inequalities $|z + 2 - 3i| \leq 2$ and $\arg z \leq \frac{3}{4}\pi$. [4]



- (c) On an Argand diagram, sketch the locus of points representing complex numbers z satisfying the equation $|z - u| = 2$. [2]

- (d) Determine the greatest value of $\arg z$ for points on this locus, giving your answer in radians. [2]



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5. June/2022/Paper_9709/33/No.5

The complex number $3 - i$ is denoted by u .

- (a) Show, on an Argand diagram with origin O , the points A , B and C representing the complex numbers u , u^* and $u^* - u$ respectively.

State the type of quadrilateral formed by the points O , A , B and C . [3]

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- (b) Express $\frac{u^*}{u}$ in the form $x + iy$, where x and y are real. [3]

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