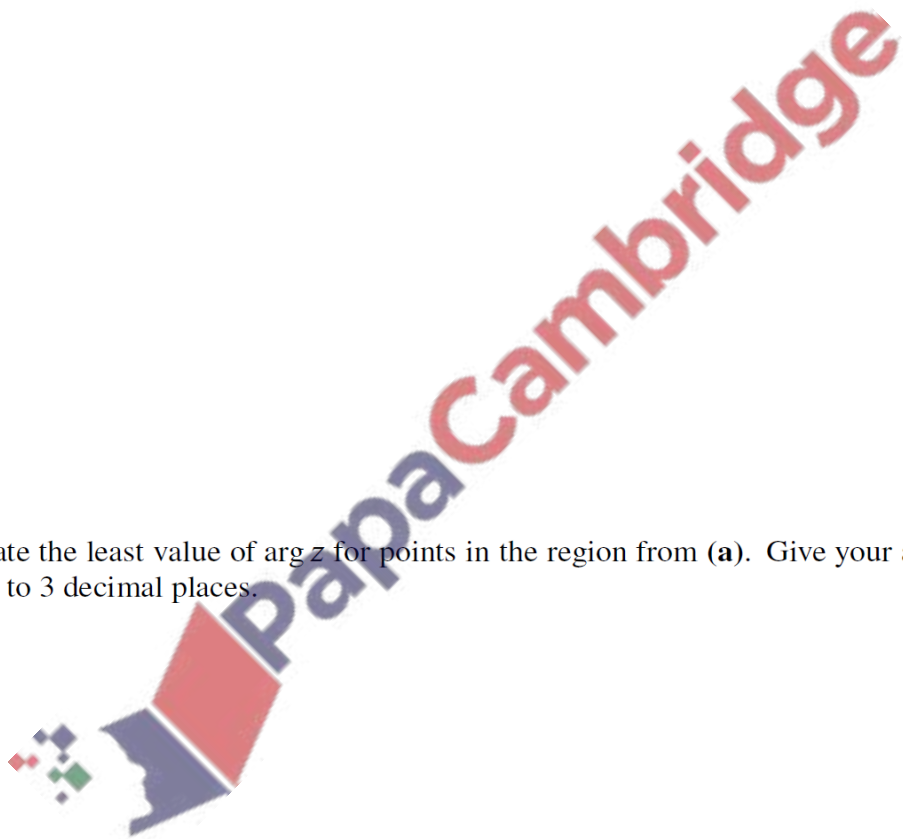


1. March/2023/Paper_9709/32/No.2

- (a) On an Argand diagram, shade the region whose points represent complex numbers z satisfying the inequalities $-\frac{1}{3}\pi \leq \arg(z - 1 - 2i) \leq \frac{1}{3}\pi$ and $\operatorname{Re} z \leq 3$. [3]

- (b) Calculate the least value of $\arg z$ for points in the region from (a). Give your answer in radians correct to 3 decimal places. [2]



2. March/2023/Paper_9709/32/No.4

Solve the equation

$$\frac{5z}{1+2i} - zz^* + 30 + 10i = 0,$$

giving your answers in the form $x + iy$, where x and y are real.

[5]

