

Logarithm and Exponential Functions – 2021 A2

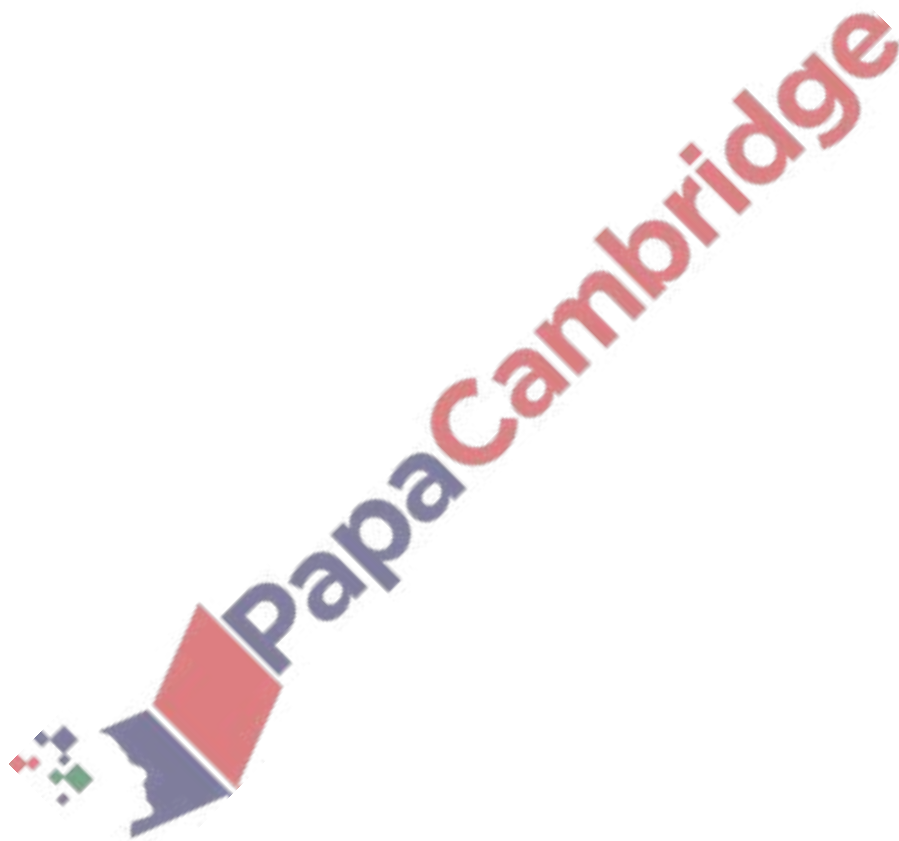
1. [June/2021/Paper_9709/22/No.1](#)

(a) Solve the equation $\ln(2 + x) - \ln x = 2 \ln 3$.

[3]

(b) Hence solve the equation $\ln(2 + \cot y) - \ln(\cot y) = 2 \ln 3$ for $0 < y < \frac{1}{2}\pi$. Give your answer correct to 4 significant figures.

[2]



2. March/2021/Paper_9709/22/No.5a

- (a) Given that $2 \ln(x + 1) + \ln x = \ln(x + 9)$, show that $x = \sqrt{\frac{9}{x + 2}}$. [3]

