

LC 2017 (SET A): PAPER 1

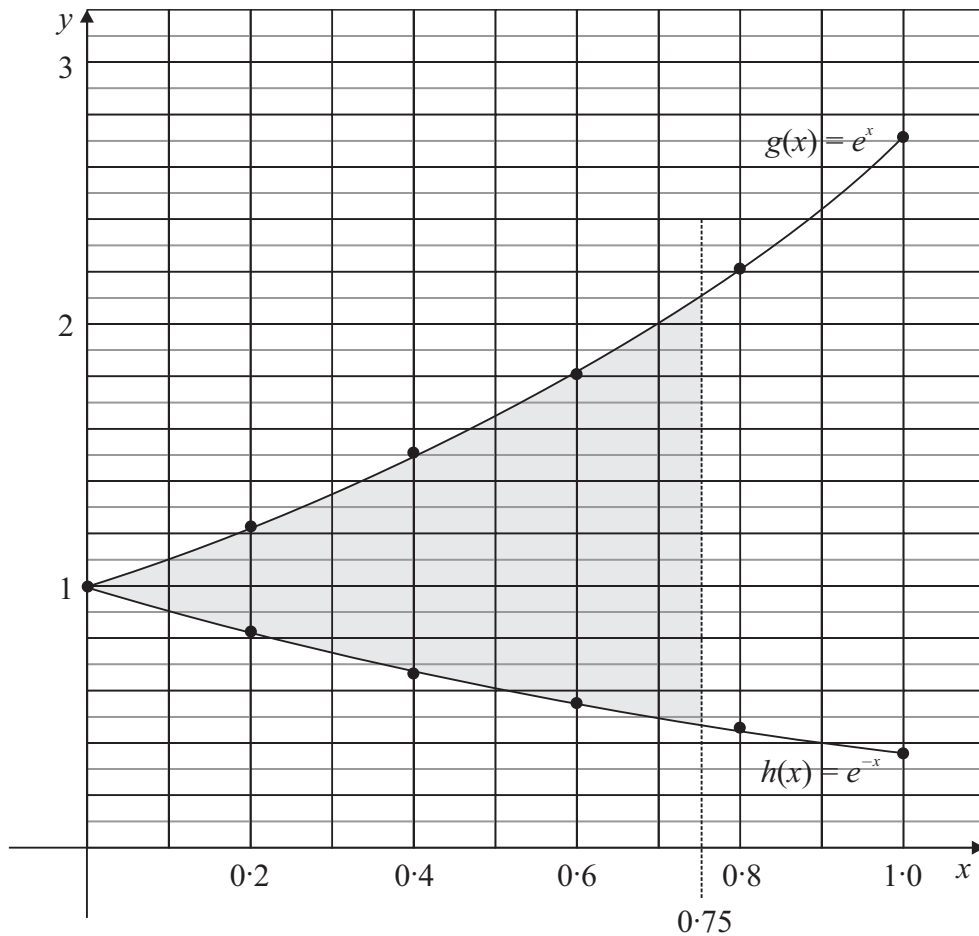
QUESTION 6 (25 MARKS)

Question 6 (a)

$$g(x) = e^x, x \in \mathbb{R}, 0 \leq x \leq 1$$

$$h(x) = e^{-x}, x \in \mathbb{R}, 0 \leq x \leq 1$$

x	0	0.2	0.4	0.6	0.8	1.0
$h(x)$	1	0.82	0.67	0.55	0.45	0.37



Question 6 (b)

$$\begin{aligned} \text{Shaded area} &= \int_0^{0.75} (e^x - e^{-x}) dx = [e^x + e^{-x}]_0^{0.75} \\ &= [(e^{0.75} + e^{-0.75}) - (e^0 + e^0)] \\ &= e^{0.75} + e^{-0.75} - 2 \\ &= 0.5894 \end{aligned}$$