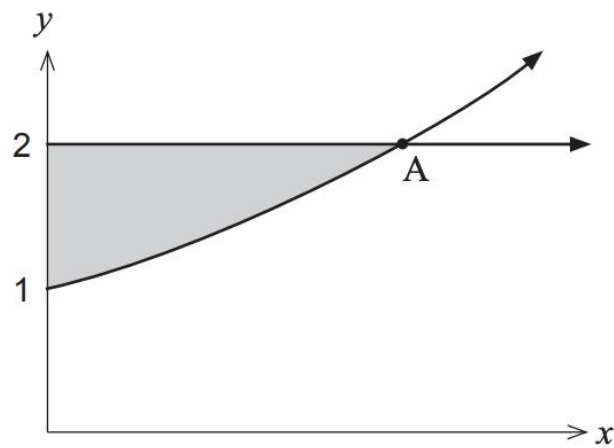


Question 5**(8 marks)**

- (a) Consider the shaded area shown between the graph of $y = e^x$, the y axis and the line $y = 2$.



- (i) Determine the coordinates of the point A . (1 mark)
- (ii) Hence or otherwise determine the area between the graph of $y = e^x$, the y axis and the line $y = 2$. (3 marks)

- (b) If the area between the graph of $y = e^x$, the y axis, the x axis and the line $x = k$, where $k \geq 0$, is to be equal to 2 square units, determine the exact value of k . (4 marks)