

Books, watches, notes or cell phones are **not** allowed. The **only** calculators allowed are the Sharp EL-531\*\*\*. You **must** show all your work, the correct answer is worth 1 mark the remaining marks are given for the work.

**Question 1.** (5 marks) Find the exact length of the curve  $y = \ln(\cos x)$  on  $[0, \pi/3]$ .

**Question 2.** (5 marks) Sketch and find the area of the region bounded by the parabola  $y = x^2$ , the tangent line to this parabola at  $(1, 1)$ , and the  $x$ -axis.