

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 average value of $f(x) = |\tan x|$ on the interval $[-\pi/3, \pi/4]$.

Question 2. (5 marks) Find the derivative of the function and simplify.

$$\frac{d}{dx} \left[\int_x^{\arctan x} \tan^{2023} \theta \, d\theta \right]$$