

You have 20 minutes to take this quiz. Each problem will be graded for clarity of work as well as correctness, so show all work **clearly and in order**. Circle or otherwise indicate your final answers. Please note that there are problems on both the front and the back of this page.

NO CALCULATORS ON THIS QUIZ

1. (0 points) Find $\frac{d}{dx}(x \csc(x^3))$.

2. (0 points) Suppose $\theta = \frac{2\pi}{3}$.

(a) Find the coordinates (x, y) of the point where the terminal edge of the angle θ intersects the unit circle. Show your work using a picture of the unit circle and a labelled triangle.

(b) Use your answer above to calculate $\sec(\frac{2\pi}{3})$.

Turn over for more...

3. (*0 points*) Show that $\sqrt{3}$ is in the range of tangent by finding an angle θ whose tangent is $\sqrt{3}$. Show your work using a picture of the unit circle and a labelled triangle.

4. (*0 points*) Find $\lim_{x \rightarrow 0} \frac{5x}{2 \sin 3x}$ without using L'Hôpital's Rule. Show your work.