

# MATH 121 EXAM 1

There will be **50** minutes for you to finish the exam, if you ever get stuck, move on and circle back to it. **No calculators**, one problem per sheet, 100 points in total

1. Convert radians to degrees and degrees to radians

(a) (5 points)  $\pi^\circ$

(b) (5 points)  $\frac{5\pi}{12}$  rad

2. (a) (15 points) Evaluate  $\sin\left(\frac{5\pi}{12}\right)$

(b) (15 points) Find the derivative of  $f(t) = te^{\sin(t^2+1)}$

3. (a) (15 points) Compute  $\int \frac{3x}{\sqrt{x^2+1}} dx$

(b) (15 points) Compute  $\int \frac{x^2}{e^x} dx$

4. (a) (15 points) Compute  $\int_0^{\sqrt{\pi}} x^3 \sin(x^2) dx$

- (b) (15 points) Below is the graph of function  $f(t) = \tan^2 t$ , compute the shaded area

