

## Sample Midterm 1

1. Calculate the following integrals.

$$\int \tan^{-1} x \, dx$$

2. Calculate the following integral

$$\int x^3 \cos x \, dx$$

3. Calculate the following integral.

$$\int \frac{x}{2\sqrt{x+3}+x} dx$$

4. Calculate the following integral.

$$\int \frac{x}{\sqrt{1+x-x^2}} dx$$

5. Calculate the following integral.

$$\int \frac{e^x}{(e^x - 2)(e^{2x} + e^x + 1)} dx$$