

# MATH 145 Calculus for Engineering and Science I

## Recitation 9

December 22th, 2025

1. Evaluate the following integrals (integration by parts):

i.  $\int x^2 \sin x dx$

ii.  $\int \sec^3 x dx$

iii.  $\int \cos(\log x) dx$

2. Evaluate the following integrals (substitution):

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

ii.  $\int x^3 \sqrt{1-x^2} dx$

iii.  $\int \sqrt{x^2+1} dx$

3. Evaluate the following integrals (mixture of methods):

i.  $\int \frac{x}{1+\sin x} dx$

ii.  $\int \log \sqrt{1+x^2} dx$

iii.  $\int \frac{1}{x^6+1} dx$