Recitation #9: Trig Integrals and Trig Substitution

Group work:

Problem 1 *Evaluate the following integrals*

(a) $\displaystyle \int \tan^{23} x \sec^6 x \, dx$

(b) $\displaystyle \int \tan^2 x \sec x \, dx$ *Hint:* $\displaystyle \int \sec x \, dx = \ln|\sec x \tan x| + C$

(c) $\displaystyle \int \tan^2 x \sin x \, dx$

Problem 2 *Evaluate*
$$\int_{-\pi}^{0} \sqrt{1 - \cos^2 x} \, dx.$$

Problem 3 *Evaluate the following integrals*

(a)
$$\int_{-\frac{5}{3}}^{-\frac{5}{6}} \frac{\sqrt{36x^2 - 25}}{x^3} \, dx.$$

(b)
$$\int \frac{dx}{(x^2 - 6x + 11)^2}.$$