

Recitation #10: Trigonometric substitutions

Group work:

Problem 1 Evaluate the following integrals

(a)

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

(b)

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

(c)

$$\int \frac{x^2}{\sqrt{4x - x^2}} dx.$$

(d)

$$\int \frac{e^x}{\sqrt{e^{2x} + 9}} dx.$$

(e)

$$\int \frac{dx}{x^{\frac{1}{2}} - 9x^{\frac{3}{2}}}.$$