

Math 1552, Integral Calculus

Section 5.5-5.6: Integration by Substitution

1. Evaluate the integrals:

$$\int \frac{1}{x^2} \sec\left(\frac{1}{x}\right) \tan\left(\frac{1}{x}\right) dx$$

$$\int \frac{\sin 3x - \cos 3x}{\sin 3x + \cos 3x} dx$$

$$\int \frac{1}{\ln(x^x)} dx$$

2. Evaluate the following integrals:

$$\int \frac{e^{2x}}{\sqrt{4 - 3e^{2x}}} dx$$

$$\int \frac{dx}{\sqrt{4 - (x + 3)^2}}$$

$$\int \frac{5p^{\sqrt{x+1}}}{\sqrt{x+1}} dx, \quad p > 0$$