

MA 121 ASSIGNMENT 3

1. Find the following antiderivatives:

a)  $\int x^5 - 2x^3 - x + 5 \, dx$       b)  $\int 3e^{5x} + \frac{3}{x} \, dx$

c)  $\int \frac{2}{\sqrt[5]{x^2}} \, dx$

2. Use integration by substitution to find

a)  $\int (3x^2 - 2)(x^3 - 2x)^7 \, dx$       b)  $\int 2x^2 e^{x^3-3} \, dx$

c)  $\int x\sqrt{2x^2 + 5} \, dx$       d)  $\int \frac{2}{5-x} \, dx$

3. Evaluate  $\int_1^3 \frac{3}{x} - e^{5x} \, dx$

4. Find the area bounded by the x-axis,  $y = x^2 - 4x$ ,  $x = 1$ , and  $x = 5$ .

5. Find the area between the curves  $y = x^2 - 6x$  and  $y = -x$ .