Math 1510 Tutorial 11

I. Evaluate the definite integral.

(a) $\int_{-1}^{2} \sqrt[3]{x}\, dx$ (b) $\int_{-1}^{1} (x^3 - 2x^2 + x - 1)\, dx$ (c) $\int_{0}^{\pi} \sin x\, dx$ (d) $\int_{0}^{2} 2^x\, dx$

(e) $\int_{-4}^{-2} \frac{dx}{x}$ (f) $\int_{1}^{2} \frac{(\sqrt{x} + \sqrt[3]{x^2})^2}{x}\, dx$ (g) $\int_{0}^{2} |1 - x|\, dx$

II. Evaluate the definite integral using change of variable.

(a) $\int_{1}^{2} \frac{dx}{2x - 1}$ (b) $\int_{e}^{e^2} \frac{1}{x \ln x}\, dx$ (c) $\int_{0}^{\sqrt{\pi}} x \sin(x^2)\, dx$ (d) $\int_{0}^{4} \frac{dx}{1 + \sqrt{x}}$

(e) $\int_{2}^{3} x(x-2)^6\, dx$ (f) $\int_{-1}^{3} \frac{x^2 + 1}{\sqrt{x^3 + 3x + 8}}\, dx$ (g) $\int_{0}^{3} \frac{x\, dx}{\sqrt{x + 1}}$ (h) $\int_{0}^{1} x^3 (x^2+1)^{1/3}\, dx$