

Assignment 13: Due Mon Nov 5th

Use substitution to find the indefinite integral

$$\int 3x^2(x^3 - 5)^{35} dx$$

$$u = x^3 - 5$$

$$du = 3x^2 dx$$

$$\int x^3(u)^{35} 3x^2 dx$$

$$\int x^3 u^{35} du$$

$$\int (u+5)(u^{35}) du$$

$$\int u^{36} + 5 \int u^{35}$$

$$\frac{1}{37} u^{37} + \frac{5}{36} u^{36}$$

$$\frac{1}{37} (x^3 - 5)^{37} + \frac{5}{36} (x^3 - 5)^{36} + C \quad \square$$