

## 5.5 - Substitution Rule Worksheet

1. Evaluate  $\int \frac{x}{(x+5)^3} dx$ . (Hint: use the substitution  $u = x + 5$ .)

2. Evaluate  $\int \sin^4(\theta) \cos(\theta) d\theta$

3. Evaluate  $\int x\sqrt{16-x^2} dx$

4. Evaluate  $\int 4t^3 e^{2-t^4} dt$

5. Evaluate  $\int \frac{(\ln x)^4}{x} dx$

6. Evaluate  $\int_1^4 \frac{e^{1/x}}{x^2} dx$ .

7. Evaluate  $\int_0^{\ln 2} \frac{e^x}{1 + e^{2x}} dx$ . (Hint: use the substitution  $u = e^x$ .)

8. Suppose  $\int_0^{36} g(u) du = 15$ . Use an appropriate substitution to evaluate  $\int_0^6 x g(x^2) dx$ .