

## (5.5) The Substitution Rule

Full Name: \_\_\_\_\_

1. Compute each of the following integrals.

(a)  $\int e^{\tan t} \sec^2 t \, dt$

(b)  $\int e^x \cos(e^x + 2) \, dx$

(c)  $\int \frac{x^3}{1+x^4} \, dx$

(d)  $\int 24x^2 \sec(2x^3) \tan(2x^3) \, dx$

(e)  $\int (12x - 10) \sqrt{3x^2 - 5x} \, dx$

(f)  $\int 2x(1+x^2)^5 \, dx$

(g)  $\int \cos^5 x \sin x \, dx$

(h)  $\int \frac{(\ln x)^3}{x} \, dx$

(i)  $\int \sin(2x + 5) \, dx$

(j)  $\int \frac{15}{\cos^2(5x)} \, dx$

(k)  $\int_0^5 \frac{1}{\sqrt{3x+1}} \, dx$