MAT 136 (Calculus I) Prof. Swift
In-class worksheet: The method of u-substitution

1. Evaluate the indefinite integral using the substitution $u = x^2 + 3$.

$$\int x \sec^2(x^2 + 3)\, dx$$

2. Evaluate the indefinite integral using the substitution $u = \cos(x)$.

$$\int \tan(x)\, dx = \int \frac{\sin(x)}{\cos(x)}\, dx$$

3. Evaluate the indefinite integral using the substitution $u = e^{2x}$.

$$\int \frac{e^{2x}}{1 + e^{4x}}\, dx$$