

## FALL- 2017 - CALCULUS 2 - TEST #1B - Solution

1) Integrate the following:  $\int e^x(\tan e^x)^2 dx$

Let  $u = e^x$ , then  $du = e^x dx$  and the integral becomes

$$\int u(\tan u)^2 \frac{du}{u} = \int \tan^2 u du = \int [(1 + \tan^2 u) - 1] du, \text{ but this is}$$
$$\int [(\sec^2 u) - 1] du = \tan u - u = \tan e^x - e^x (+C)$$