

The majority of the credit you receive will be based on the completeness and the clarity of your responses. **Show all of your work and justify your solutions as much as possible.**  
This is a 15 minute quiz and has 2 questions, for a total of 10 points

(5 points) 1. Find  $\frac{dy}{dx}$  where  $y = (\ln(x))^{\ln(x)}$  (Hint: use logarithmic differentiation).

(5 points) 2. Evaluate the following integral:

$$\int x2^{x^2} dx$$