No notes, books, cellular devices or graphing calculators are to be used.

1. (4.2 #15 & 4.4 #29) Solve the equations for $x$:
   
   (a) $e^{x^2-2x} = e^8$

   (b) $\ln(\ln 3x) = 0$

2. (4.3 #43) Determine all functions $y = f(x)$ such that $y' = -.5y$ and $f(0) = 1$. 
3. (4.3 #9 & 27) Differentiate

(a) \( y = \frac{e^{\frac{x}{2} + 1}}{4} \)

(b) \( y = xe^x \)