

Show all work clearly and in order. Justify your answers. You have 15 minutes for this quiz.

PROBLEM ONE Solve the following initial value problem.

$$y' = \frac{x^2}{e^{3y}}, \quad y(1) = 1$$

PROBLEM TWO Find the tangent line to the parametric curve given by  $x = t^2 + 3$ ,  $y = \sin(t)$  at the point  $(3,0)$ .