Calculus II

Assignment 10

20180717

Name : _____

Student ID : _____

1. Solve the differential equation.
   $\frac{dy}{dx} = xe^{-y}$

2. Find the solution of the differential equation that satisfies the given initial condition.
   $\frac{dy}{dx} = \frac{x}{y}$, $y(0) = -3$

3. Find an equation of the curve that passes through the point $(0, 1)$ and whose slope at (x, y) is xy.

4. Solve the differential equation.
   $y' - y = e^x$

5. Solve the initial value problem.
   $t^3 \frac{dy}{dt} + 3t^2 y = \cos t$, $y(\pi) = 0$

6. Use Euler's method with step size 0.5 to compute the approximate y-values y_1, y_2, y_3, and y_4 of the solution of the initial-value problem
   $y' = y - 2x$, $y(1) = 0$.

Reading materials : Textbook (Calculus 6ed Stewart) Section $10.1 \sim 10.5$, especially
— Section 10.1, Example 2.
— Section 10.2, Example 3.
— Section 10.3, Example 1, 2, 3.
— Section 10.5, Example 1, 2, 3.
Or alternative Textbook (Calculus Early Transcendentals 6ed Stewart) Section $9.1 \sim 9.5$, especially
— Section 9.1, Example 2.
— Section 9.2, Example 3.

— Section 9.3, Example 1, 2, 3.
— Section 9.5, Example 1, 2, 3.