

Homework Assignment #3

1. Use **Mathematica** to solve the following ordinary differential equation. Then plot 4 different solutions with visible difference on the solution curves. (Be creative, you can use different color, different thickness or different ...)

$$y'(x) - y(x)\tan(x) = x$$

2. Use **Mathematica** to solve the following ordinary differential equation with 4 different initial conditions separately. Then plot those 4 different solutions with visible difference as x ranging from 0 to 5.

$$y'(x) + y(x)\tan(x) = \sec(x), \quad y(0) = y_0$$

for $y_0 = 0, 1, 2, 3$.

(80% for correctness, 20% for presentation)