Name : .... **ID** #...............................Sec# .... Serial #: ....

Question: Consider the following differential equation:

$$xy'' + y' = 1, \quad x \in (-\infty, 0).$$

a) [2 points] Show that $y = x$ is a particular solution of the differential equation.

b) [3points] Guess one solution of the homogeneous differential equation.

c) [5 points] Find a general solution of the non-homogeneous differential equation.