Part A (14 points): Record answers on the bubble sheet in your answer booklet

1. [2 pts.] Which of the following terms apply to the following differential equation?

$$e^x y' - xy = x$$

I. first-order YES
II. separable YES → rewrite as $y' = xe^{-x}(1+y)$

(A) I only (B) II only (C) both I and II
(D) neither I nor II (E) not enough information to determine

(1 pt. given for A or B)

2. [2 pts.] Which of the following differential equations are linear ?

I. $y' + x^2 y = e^y$ NO
II. $xy' + x^2 y = \sin x$ YES rewrite as $y' + xy = \frac{\sin x}{x}$