Math 33b, Winter 2013, Tonći Antunović - Homework 1

From the textbook solve the problems:
Section 2.1: 10
Section 2.2: 10, 14, 16, 18, 36, 40
Section 2.4: 8, 16, 20, 24, 30, 34.

And also the problems below:

Problem 1. Find the general solution of the equation

$$y' - y^2 = (yt)^2.$$

Problem 2. Solve the initial value problem

$$y' = e^y t, \quad y(0) = 0.$$

Problem 3. Find the general solution of the equation

$$y' = y + e^{2t}.$$

Problem 4. Using the substitution $z = y^2$ solve the initial value problem

$$yy' + y^2 = t, \quad y(0) = 1.$$