Name: ID #: Section #:

Q1) [**5pts**] Solve the initial value problem

$$x^2y'' - 3xy' + 4y = 0,\ y(1) = 5,\ y'(1) = 3$$

Q2) [**5pts**] Find two power series solutions of the differential equation $y'' + x^2y' + xy = 0$ about the ordinary point $x = 0$. Give the first three nonzero terms for each series solution.

Name: ID #: Section #:

Q1) [**5pts**] Solve the initial value problem

$$x^2y'' - 4xy' + 6y = 0,\ y(-2) = 8,\ y'(-2) = 0$$

Q2) [**5pts**] Find two power series solutions of the differential equation $y'' - 2xy' + y = 0$ about the ordinary point $x = 0$. Give the first three nonzero terms for each series solution.