Quiz 5

Your name:

Your TA's name:

No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

1. [5 points] Solve the initial-value problem. Show all the work. Mention a type of the given differential equation.

$$y' = \frac{y^2}{x^3}, \qquad y(1) = -1$$

2. [5 points] Solve the initial-value problem. Show all the work. Mention a type of the given differential equation.

$$\frac{y'}{x} - 2y = 2e^{x^2}, \qquad y(1) = -2$$

bonus problem [5 points extra]   Solve the initial-value problem with the second-order nonhomogeneous differential equation using the method of undetermined coefficients.

$$y'' + y = \cos x, \qquad y(0) = 0, \quad y'(\pi) = \frac{\pi}{2}$$