

Quiz 7

1) Verify that the function $y = \sin(2x-1) + (x-1)^2$ is a solution to the differential equation

$$y'' + 4y = 4x^2 - 8x + 6$$

2) Solve the initial-value problem

$$y' = xe^{x^2-1} + \frac{1}{\sqrt{x}} - 3, \quad y(1) = \frac{1}{2}$$

Explain your answers.