

DIRECTIONS To receive full credit, you must provide complete legible solutions to the following problems in the space provided. Transfer all your answers to the space provided.

1. Find the general solution of the given second-order differential equation.
 $y'' - 3y' + 2y = 0$

2. Find the general solution of the given second-order differential equation.
 $y'' + 4y' + 4y = 0$

3. Find the general solution of the given second-order differential equation.
 $2y'' - 3y' + 4y = 0$

4. Solve the given initial-value problem.

$$\frac{d^2y}{d\theta^2} + y = 0, \quad y(\pi/3) = 0, \quad y'(\pi/3) = 2$$

5. Solve the given initial-value problem

$$y''' + 4y'' + 4y' = 0, \quad y(0) = 0, \quad y'(0) = 1, \quad y''(0) = -3$$