

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. Solve the given system of differential equations by systematic elimination.

$$x' = 2x - y$$

$$y' = x$$

2. Solve the given system of differential equations by systematic elimination. .

$$x' = 8x + 13y$$

$$y' = x - 4y$$

3. Solve the given differential equation

$$2 \frac{dx}{dt} - 6x + \frac{dy}{dt} = e^t$$

$$\frac{dx}{dt} - x + \frac{dy}{dt} = 5e^t$$