

**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 equation by using a suitable substitution

$$y'' = 1 + (y')^2$$

2. Solve the equation by using a suitable substitution .

$$x^2 y'' + (y')^2 = 0$$

3. Solve the equation by using a suitable substitution .

$$(y+3)y'' = (y')^2$$