

Name: \_\_\_\_\_

1. Solve by the method of variation of parameters:

$$y'' - 3y' + 2y = 2e^x$$

2. Solve by the method of variation of parameters:

$$y'' - 3y' + 2y = 4x$$

3. Solve the Cauchy-Euler equation:

$$x^2 y'' - xy' - 8y = 0$$

4. Solve the Cauchy-Euler equation:

$$x^2 y'' - xy' + y = 0$$

5. Solve the Cauchy-Euler equation:

$$x^2 y'' - xy' + 10y = 0$$

6. Solve by the power series method:

$$y' + 2xy = 0$$

7. Solve by the power series method:

$$y'' + 2xy' + 2y = 0$$

Bonus: Use any appropriate method to solve  $xy'' - y' = 0$