Math 242, Spring 1994, Exam 3

SHOW your work. $\boxed{CIRCLE}$ your answer. **CHECK your answers**. Each problem is worth 20 points

1. Find the general solution of $y'' + y' - 6y = e^{2x}$.

2. Find the general solution of $xy'' + y' = 4x$.

3. Find the general solution of $x^2 y'' + xy' - 4y = x^2$.

4. One solution of $(1 + x^3)y'' - 3x^2 y' + 3xy = 0$ is $y = x$. Find the general solution of the differential equation.

5. Solve the initial value problem $y'' + 9y = e^x$, $y(0) = 1$, $y'(0) = 1$.