Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Determine whether $y = e^{3t}$ is a solution to the differential equation y'' - 5y' + 6y = 0.

2. Use Euler's Method with step size $\Delta x = 0.5$ to approximate y(2) for the differential equation y' = y - 2x if y(1) = 0.