Feb 12

Convert each of the Volterra integral equations to an equivalent IVP

1. $y(x) = e^x - \int_0^x (x - t)y(t)dt$

2. $y(x) = x - \cos x + \int_0^x (x - t)y(t)dt$

3. $y(x) = -5 + 6x + \int_0^x (5 - 6x + 6t)y(t)dt$

4. $y(x) = 1 + x + \frac{5}{2}x^2 + \int_0^x (3 + 6x - 6t - \frac{5}{2}(x - t)^2)y(t)dt$

5. $y(x) = x^2 + \frac{1}{6}\int_0^x (x - t)^3 y(t)dt$