Please add the following **Part (b)** to Exercise 2.2.3:

Show that the integral operator

$$Ku(x) \equiv u(x) + \int_0^x e^{-(x-z)^2} u(z)\, dz$$

is linear (in $u$). Is the equation

$$\int_0^x e^{-(x-z)^2} u(z)\, dz = -u(x)$$

homogeneous?