

2.68
2.1

$$n=1 \quad y^{(1)} = (x^2 + 2x)e^x \quad \checkmark$$

$$n=k \quad y^{(k)} = (x^2 + 2kx + k^2 - k)e^x$$

$$y^{(k+1)} = [(x^2 + 2kx + k^2 - k)e^x]' \stackrel{?}{=} [(x^2 + 2(k+1)x + (k+1)^2 - (k+1))]e^x$$

$$(2x + 2k)e^x + (x^2 + 2kx + k^2 - k)e^x \stackrel{?}{=} [x^2 + 2(k+1)x + k^2 + k]e^x$$

$$e^x(x^2 + 2x(1+k) + k^2 + k) =$$

