Fysiikan matematiikka: Harjoitus 9

1. a) $y(t) = \frac{Le^{kt}}{c+e^{kt}}$ b) $y(3) \approx 803$, $y(100) \approx 1000$

2. b) $y(t) = 5e^{t-1} - t^2 - 2t - 2$

3. a) $y(x) = Ae^{-4x} + Bxe^{-4x}$ b) $Ae^{\left(-\frac{7}{2}+\frac{\sqrt{65}}{2}\right)x} + Be^{\left(-\frac{7}{2}-\frac{\sqrt{65}}{2}\right)x}$

4. a) $y(x) = e^{-x} - 2xe^{-x}$

    b) $y(x) = \sqrt{3}e^x \sinh\left(\sqrt{3}x\right) = \frac{\sqrt{3}}{2}e^x\left(e^{\sqrt{3}x} - e^{-\sqrt{3}x}\right)$