LÖSUNG ZU 265:
a)

$y'(t) = 2y(t) \qquad y(0) = 1$

$\frac{dy}{dt}$ = 2y (vereinfachte Schreibweise)

$dy = 2y\ dt$

$\frac{1}{y} dy = 2\ dt$

$\int \frac{1}{y} dy = \int 2 dt$

$\ln(y) = 2t + C$

$y = e^{2t + C} = C_1 \cdot e^{2t}$

$y(0) = C_1 \cdot e^0 = C_1 = 1 \quad \rightarrow \quad \mathbf{y(t) = e^{2t}}$