

$$\textcircled{\#11} \quad e^t \left(\frac{dy}{dt} + 1 \right) + 2e^t = \frac{dy}{dt} - 2$$

$$e^t \frac{dy}{dt} + e^t + 2e^t = \frac{dy}{dt} - 2$$

$$\cancel{e^t} 3e^t + 2 = \frac{dy}{dt} - e^t \frac{dy}{dt} = \frac{dy}{dt} (1 - e^t)$$

$$\frac{3e^t + 2}{1 - e^t} = \frac{dy}{dt} \quad \text{or} \quad \frac{dy}{dt} = \frac{-3e^t - 2}{e^t - 1}$$

$\textcircled{\#12}$ ~~solve~~ solve for x

$$3AB^{2x+1} = 5B$$

$$\frac{B^{2x+1}}{B} = \frac{5}{3A}$$

$$B^{2x} = \frac{5}{3A}$$

$$\ln(B^{2x}) = \ln\left(\frac{5}{3A}\right)$$

$$2x \ln B = \ln\left(\frac{5}{3A}\right)$$

$$x = \frac{\ln\left(\frac{5}{3A}\right)}{2 \ln B}$$

$\textcircled{\#13}$ solve for t

$$\frac{B^2 + BC^t}{D} = 7B$$

$$B^2 + BC^t = 7BD$$

$$BC^t = 7BD - B^2$$

$$C^t = \frac{7BD - B^2}{B} = 7D - B$$

$$\ln C^t = \ln(7D - B)$$

$$t = \frac{\ln(7D - B)}{\ln C}$$