

$$\text{ODE: } \frac{dy}{dt} = -2(y - 3)$$

$$\text{General Solution: } y = 3 + C e^{-2t}$$

$$\text{Because } \frac{d}{dt}(y) = \frac{d}{dt}(y-3) = -2(y-3)$$

$$\text{So } y - 3 = C e^{-2t}$$

$$\text{Thus } y = 3 + C e^{-2t}$$