

DS Ex 3

$$\textcircled{1} \forall t \geq 1, y(t) = C \cdot |1-t| + |1-t| \cdot \ln \left| \frac{t}{t-1} \right| \\ = C \cdot (t-1) + (t-1) \cdot \ln \left(\frac{t}{t-1} \right) \quad \text{ai } C \in \mathbb{R}$$

$$\textcircled{2} \forall t \in \mathbb{R}, y(t) = C e^{-t} + e^{-t} \ln(1+e^t) \quad \text{ai } C \in \mathbb{R}$$

$$\textcircled{3} \forall t < 0, y(t) = C e^{-1/t} + e^t \quad \text{ai } C \in \mathbb{R}$$

$$\textcircled{4} \forall t > 0, y(t) = C t^2 + t^3 \quad \text{ai } C \in \mathbb{R}$$

$$\textcircled{5} \forall t > 0, y(t) = \frac{C}{t} + \arctan t - \frac{1}{2t} \ln(1+t^2) \quad \text{ai } C \in \mathbb{R}$$