

3) Conditions, which has to be performed by the Signal

→ Signal has to perform the dirichlet conditions

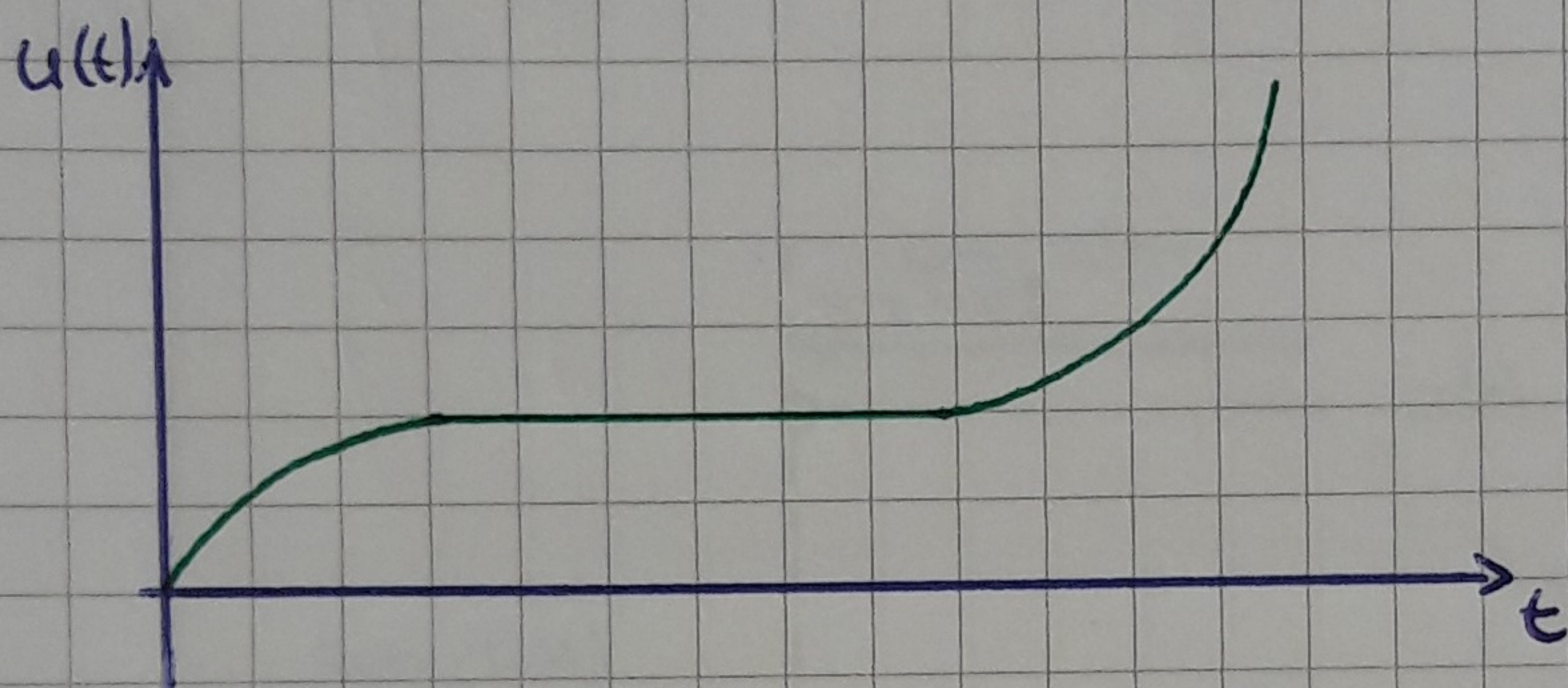
3.1

You could separate the time axis in finite intervals and each of them is always monotone and continuous.

Monotonicity

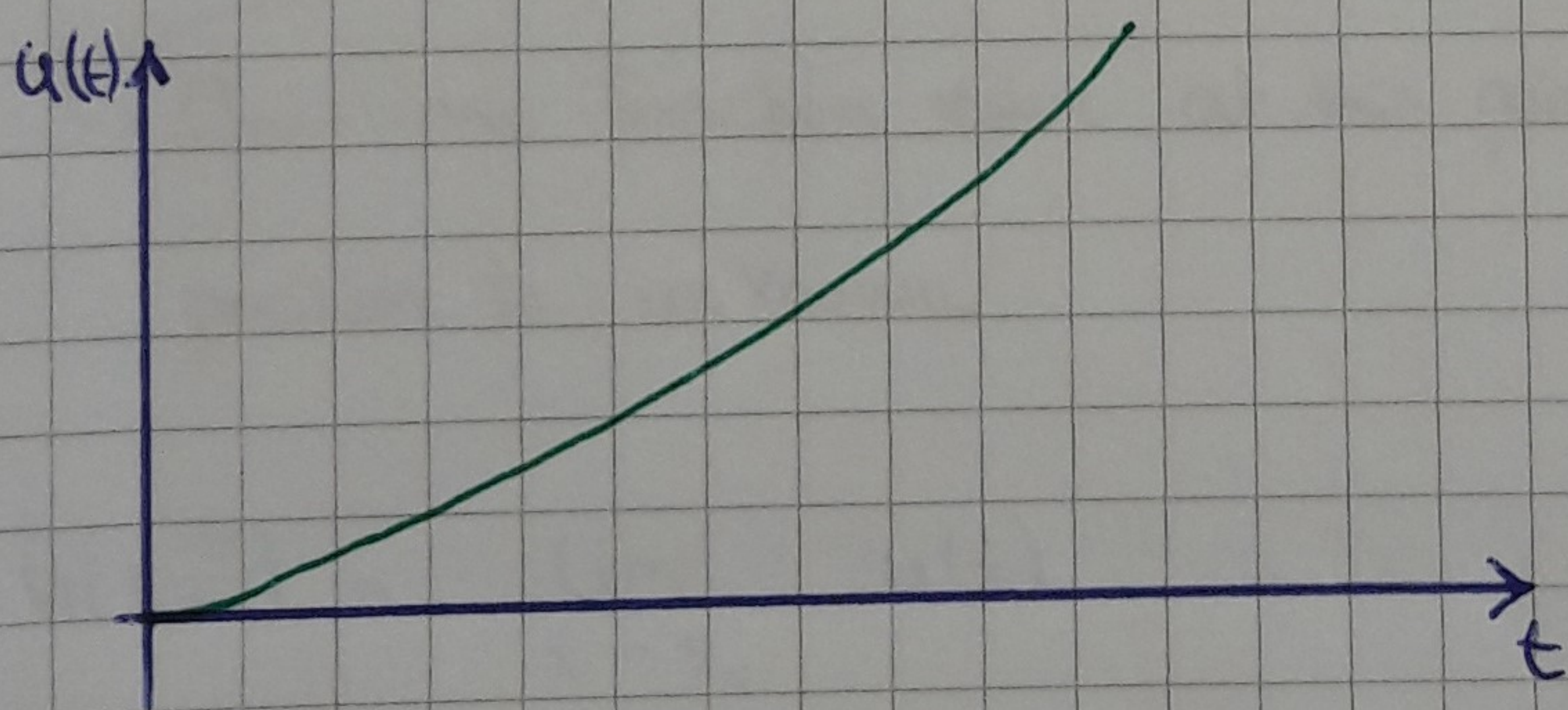
• monotonically increasing function $u(t)$

→ $t_1 < t_2 \Rightarrow u(t_1) \leq u(t_2) \quad | \quad \forall t_1, t_2 ; t_1, t_2 \in \mathbb{R}$
→ $u'(t) \geq 0$



• strictly monotonically increasing function $u(t)$

→ $u_1 < u_2 \Rightarrow u(t_1) < u(t_2) \quad | \quad \forall t_1, t_2 ; t_1, t_2 \in \mathbb{R}$
→ $u'(t) > 0$



• monotonically decreasing function $u(t)$

→ $t_1 > t_2 \Rightarrow u(t_1) \geq u(t_2) \quad | \quad \forall t_1, t_2 ; t_1, t_2 \in \mathbb{R}$
→ $u'(t) \leq 0$

