

MAS Ü7

$$3.) \quad F(x) = \begin{cases} x & x < 0 \\ 1+x^2 & 0 \leq x < 1 \\ 3x & 1 \leq x < 2 \\ 9 & x \geq 2 \end{cases}$$

ges: F_s, F_d mit $F_s \dots$ stetig, $F_d \dots$ diskret und $F = F_s + F_d$

$$F_s(x) = \begin{cases} x & x < 0 \\ x^2 & 0 \leq x < 1 \\ 3x-2 & 1 \leq x < 2 \\ 4 & x \geq 2 \end{cases}$$

$$\lim_{x \rightarrow 0-} F_s(x) = 0 = \lim_{x \rightarrow 0+} F_s(x)$$

$$\lim_{x \rightarrow 1-} F_s(x) = 1 = \lim_{x \rightarrow 1+} F_s(x)$$

$$\lim_{x \rightarrow 2-} F_s(x) = 4 = \lim_{x \rightarrow 2+} F_s(x)$$

$\Rightarrow F_s$ ist stetig

$$F_d(x) = \begin{cases} 0 & x < 0 \\ 1 & 0 \leq x < 1 \\ 2 & 1 \leq x < 2 \\ 5 & x \geq 2 \end{cases}$$

$$\mu_F(0) = 1 \quad \mu_F(1) = 1$$

$$\mu_F(2) = 3$$

offensichtlich ist F_d diskret und $F_s + F_d(x) = \begin{cases} x & x < 0 \\ x^2 + 1 & 0 \leq x < 1 \\ 3x & 1 \leq x < 2 \\ 9 & x \geq 2 \end{cases}$