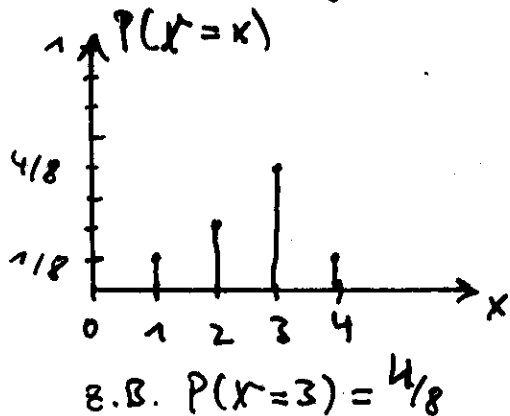
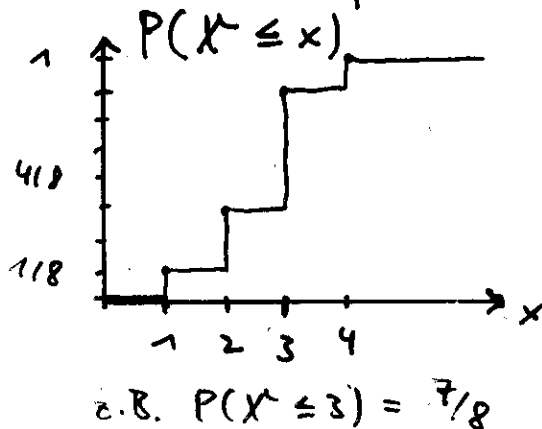


Bisher: Diskrete Werte

Wa. verteilung



Kum. Vert. fkt.



Neu: Kontinuierliche Werte

Problem:

ZV X_0 uniform auf Wertebereich $\omega_0 = \{0, 1, \dots, 9\} \Rightarrow P(X_0 = x) = 1/10$

X_1 —||—

$\omega_1 = \{0,0; 0,1; \dots; 9,9\} \Rightarrow P(X_1 = x) = 1/100$

X_2 —||—

$\omega_2 = \{0,00; 0,01; \dots; 9,99\} \Rightarrow P(X_2 = x) = 1/1000$

⋮

X_i —||—

X_∞

$\omega_\infty = [0, 10]$

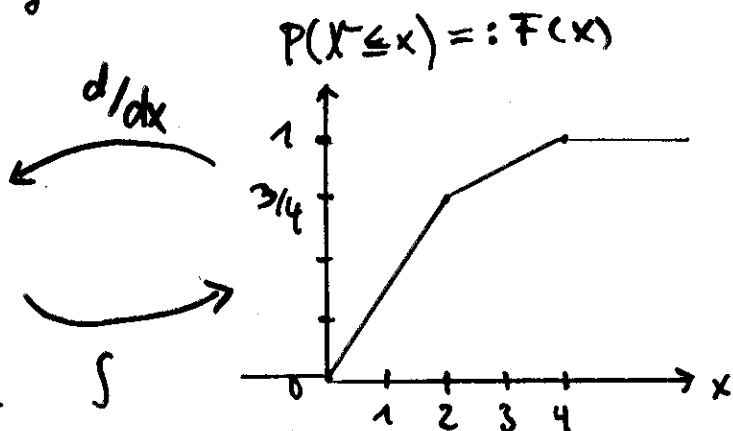
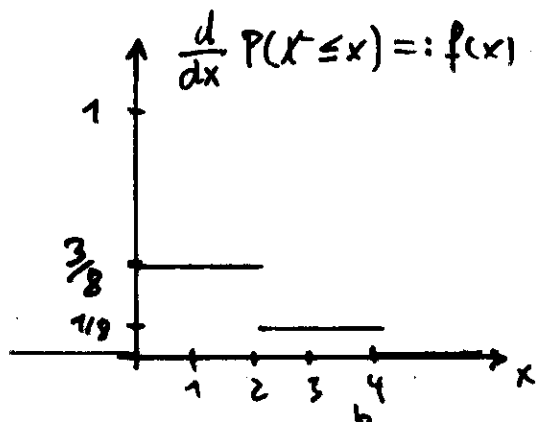
$$P(X_i = x) = \frac{1}{10^{i+1}}$$

$$P(X_\infty = x) = 0$$

\Rightarrow Wa. verteilung ist nutzlos bei kontinuierlichen Werten

Aber: Kum. Vert. fkt. ist weiter OK

Ersatz für Wa. verteilung: Wa. dichte



$$P(a \leq X \leq b) = \int_a^b f(x) dx$$

\iff
äquivalent

$$P(a \leq X \leq b) = P(X \leq b) - P(X \leq a)$$