

a) Nein; betrachte jede einzelne Beob.

e) $X \sim N(4, 49)$; $P[X \in [5, 9]] = P[5 \leq X \leq 9] = P[1 \leq X - 4 \leq 5]$

$$= P\left[\frac{1}{7} \leq \frac{X-4}{7} \leq \frac{5}{7}\right]$$

$$\stackrel{1/2}{\rightarrow} = \Phi\left(\frac{5}{7}\right) - \Phi\left(\frac{1}{7}\right)$$

$$\approx 0.763 - 0.557 = 0.206$$

c) 2% ; $\frac{1}{2}$ P bei 1% ; $\frac{1}{2}$ P bei 95%

d) $E[X+Y+Z] = E[X] + E[Y] + E[Z]$

$$= 3 + \frac{1}{3} + 4 = 7.33 = \frac{22}{3}$$

e) Nein

f) $V(X+Y+Z) \stackrel{H}{=} V(X) + V(Y) + V(Z) =$

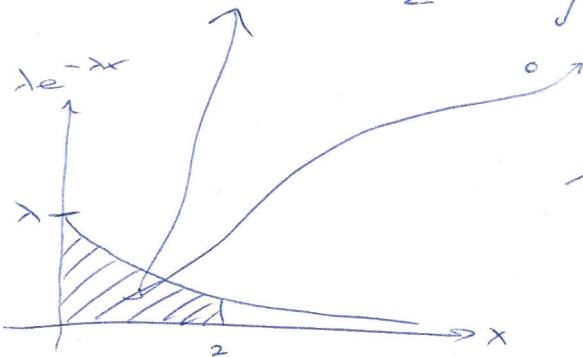
$$= 4 + \frac{1}{9} + \frac{1}{12} \cdot 2^2 =$$

$$= 4 + \frac{1}{9} + \frac{1}{3} = 4 + \frac{1}{9} + \frac{3}{9} = 4.444$$

$\frac{40}{9}$ $\frac{1}{2}$ für $2.4x$

2) exp(λ) hat 1, 3 & 4 erfüllt; wähle noch λ so, daß

$$P[X \leq 2] = \frac{1}{2} ; \int_0^2 \lambda e^{-\lambda x} dx = -e^{-\lambda x} \Big|_0^2 = -e^{-2\lambda} + 1$$



$$1 - e^{-2\lambda} \stackrel{!}{=} \frac{1}{2}$$

$$e^{-2\lambda} = \frac{1}{2}$$

$$-2\lambda = \ln \frac{1}{2} = -\ln 2$$

Lsg: $f(x) = \begin{cases} 0 & x < 0 \\ \lambda e^{-\lambda x} & x \geq 0 \end{cases}$; wo $\lambda = \frac{\ln 2}{2}$

od. UL [1,3]