Isd Ü2

5) X... annual rainfall in Cleveland $X \sim N(40.2, 8.4)$

a) $\mathbb{P}(X > 44)$?

$P(X > 44) = 1 - P(X \leq 44)$

transform X into standard $N(0,1)$

$$y = \frac{x - \mu}{\sigma} = \frac{X - 40,2}{8,4}$$

$P(X \leq 44) = P(Y \leq 0,45) = 0,6736 \quad \Rightarrow P(X > 44) = 0,3264$

b) rainfalls exceeds 44 inches exactly 3 out of 7 years?

$$\binom{7}{3} (P(X > 44))^3 (P(X \leq 44))^4 = 35 \cdot 0,3264^3 \cdot 0,6736^4$$

$$= 0,2506$$