

Rešitve izpita iz verjetnosti in statistike z dne 9. 6. 2006

FRI – univerzitetni študij

1. a) $\frac{\binom{5}{5}\binom{19}{1}}{\binom{24}{6}} = \frac{\binom{6}{5}\binom{18}{0}}{\binom{24}{5}} \doteq 1 \cdot 4 \cdot 10^{-4}$.

b) $1/6$.

2. $S \sim \left(\begin{array}{ccccccccc} 1 & 2 & 4 & 5 & 6 & 7 & 8 & 9 \\ \frac{1}{6} & \frac{1}{6} & \frac{7}{36} & \frac{7}{36} & \frac{7}{36} & \frac{1}{36} & \frac{1}{36} & \frac{1}{36} \end{array} \right)$.

3. a) $\int_1^3 (a + x^{-3}) dx = 2a + \frac{4}{9} = 1 \Rightarrow a = \frac{5}{18}$.

b) $P(X < 2) = \int_1^2 \left(\frac{5}{18} + x^{-3} \right) dx = \frac{47}{72}$,

$$E(X) = \int_1^3 \left(\frac{5}{18} x + x^{-2} \right) dx = \frac{16}{9}.$$

4. $\chi^2 = 19 \cdot 556$, $K_\alpha = (9 \cdot 49, \infty)$, hipotezo zavrnemo.