

6p, 5k vizsgatétel nélkül 3

Mi a vizsga 3-ból 2 kék és 1 piros

$$\frac{\binom{6}{1} \cdot \binom{5}{2}}{\binom{11}{3}} \text{ szíj} = \frac{6 \cdot 5 \cdot 4 \cdot 3}{11 \cdot 10 \cdot 9}$$

1. megoldás

$$\{1, \dots, 6\} \mid \{7, \dots, 11\}$$

$$(i, j, k) \quad i \neq j, j \neq k, i \neq k \quad i, j, k \in \underline{11} = \Omega$$

$$11 \cdot 10 \cdot 9$$

$$A_{\textcircled{1}} = \{\text{pontosan 2 kék golyó van}\} = A_{\textcircled{1}}^{\text{I}} \cup A_{\textcircled{1}}^{\text{II}} \cup A_{\textcircled{1}}^{\text{III}}$$

$$A_{\textcircled{1}}^{\text{I}} = \{\text{az első piros a többi kék}\} =$$

$$= \left\{ \underset{\substack{\uparrow \\ \textcircled{1} \dots \textcircled{6}}}{(i, j, k)} \mid i \in \underline{6}, j, k \in \underline{11}, j \neq k \right\}$$

$$|A_{\textcircled{1}}^{\text{I}}| = 6 \cdot 5 \cdot 4 = |A_{\textcircled{1}}^{\text{II}}| = |A_{\textcircled{1}}^{\text{III}}|$$

$$|A_{\textcircled{1}}| = \sum_{i \in \text{I, II, III}} |A_{\textcircled{1}}^i| = \frac{3 \cdot 6 \cdot 5 \cdot 4}{11 \cdot 10 \cdot 9} = \frac{4}{11}$$

2. megoldás

$$\Omega_2 = \{\{i, j, k\} \subset \underline{11}\}$$

$$A_2 = \{\{i\} \cup \{j, k\} \mid \{i\} \subset \underline{6}, \{j, k\} \subset \{7, \dots, 11\}\}$$

$$|A_2| = 6 \cdot \binom{5}{2}$$

$$P(A_2) = \frac{|A_2|}{|\Omega_2|} = \frac{6 \cdot \binom{5}{2}}{\binom{11}{3}}$$