$$\mathbb{P}(A_{ij} \cap A_{ik}) = \sum_{x \in \underline{365}} \mathbb{P}(B_{ix} \cap B_{jx} \cap B_{kx}) = \sum_{x \in \underline{365}} \frac{1}{(365)^3} =$$

$$= \frac{1}{365^2} = \mathbb{P}(A_{ij})\,\mathbb{P}(A_{ik})$$

Tehát az $\binom{n}{2}$ esemény ~~paralellanul~~ páronként ftlenek

b) már ~~megmutattuk~~ megmondtuk, hogy nem

$$\mathbb{P}(A_{ij} \cap A_{jk} \cap A_{ki}) = \sum_{x \in \underline{365}} \mathbb{P}(B_{ix} \cap B_{jx} \cap B_{kx}) =$$

$$= \frac{1}{365^2} \neq \frac{1}{365^3} = \mathbb{P}(A_{ij} \cap A_{jk} \cap A_{ki})$$

2.17.

$A_i \quad i \in \mathbb{N} \qquad A_i = \{i\text{-edik vizsgán átmegy}\}$

$$\mathbb{P}(A_i \mid A_{i-1}^c \cap \ldots \cap A_1^c) = \frac{1}{1+i} \qquad \frac{1+k-1}{1+k}$$

$$1 - \mathbb{P}(\text{soha nem megy át}) = 1 - \prod_{i=1}^{\infty} \left(1 - \frac{1}{1+k}\right) = 1 - 0$$

$$\cancel{= 1 - \sum_{k=1}^{\infty} \frac{k}{1+k} = 1 - \frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \ldots \frac{n-2}{n-1} + \frac{n-1}{n} + \ldots \neq}$$

$$\cancel{= 1 - \left(\frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \ldots + \frac{n-2}{n-1} + \frac{n-1}{n}\right)}$$

$$\cancel{\frac{n-2}{n-1} + \frac{n-1}{n} = \frac{(n-2)n + (n-1)^2}{(n-1)n} =}$$

$$\cancel{= \frac{n^2 - 2n + n^2 - 2n + 1}{n^2 - n} = \frac{2n^2 - 4n + 1}{n^2 - n}}$$