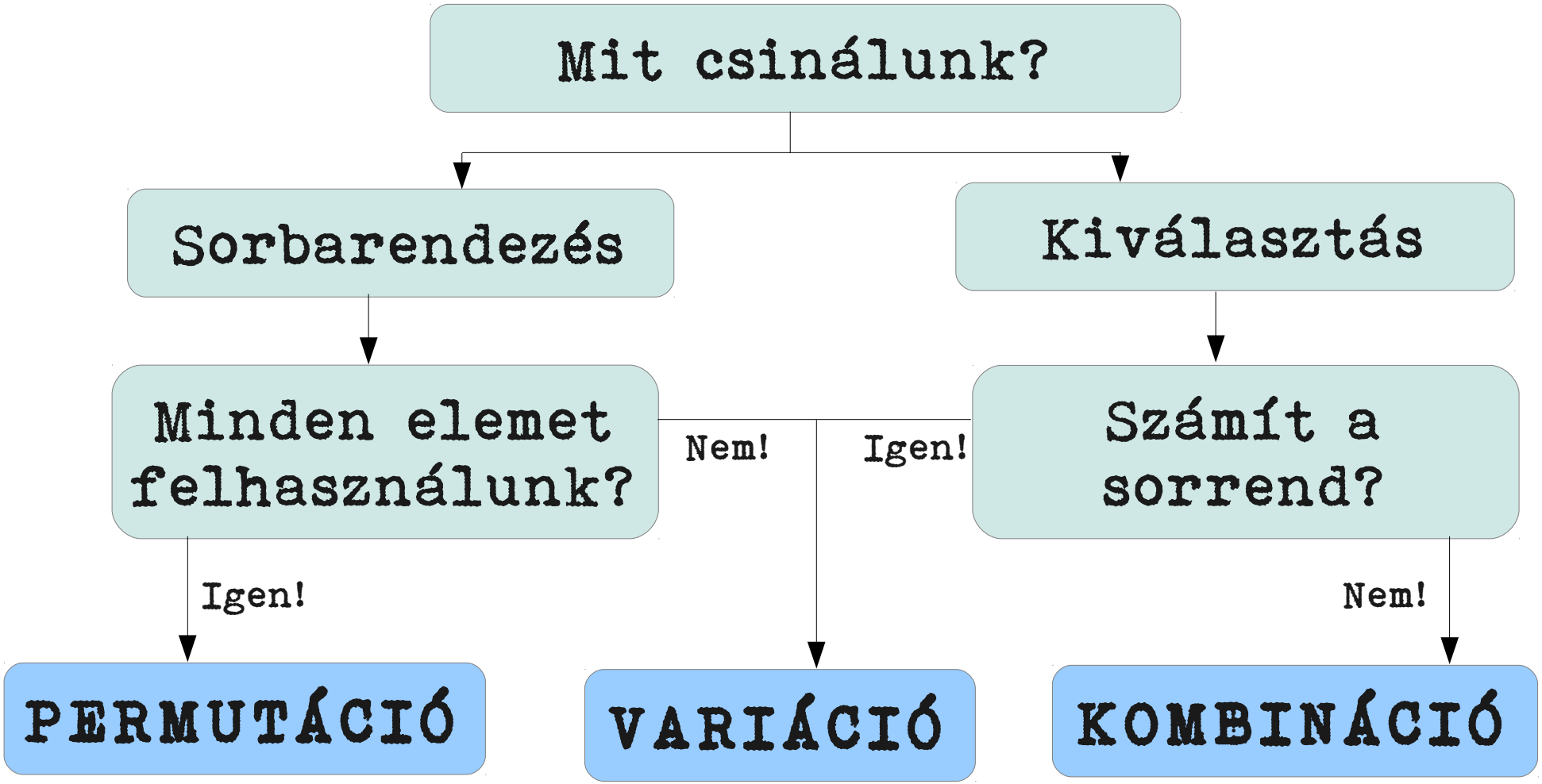

$$P_n = n!$$

$$P_n^{r_1, r_2, \ldots, r_k} = \frac{n!}{r_1! \cdot r_2! \cdot \ldots \cdot r_k!}$$

$$V_n^k = \frac{n!}{(n-k)!}$$

$$V_n^{k,i} = n^k$$

$$C_n^k = \binom{n}{k} = \frac{n!}{k! \cdot (n-k)!}$$

$$C_n^{k,i} = \binom{n+k-1}{k}$$