$$P\left(\sum A_i\right) = \sum_{i=1}^{n} P(A_i) - \sum_{i<j} P(A_i A_j) + \sum_{i<j<k} P(A_i A_j A_k) + \dots \quad \boxed{=}$$

$\exists q = 1-p$

$$P(A_i) = \frac{1-p}{n} = \frac{q}{n} \quad - n \text{ штук}$$

$$P(A_i A_j) = q^2 \cdot \frac{1}{n(n-1)} = \frac{q^2}{A_n^2} \quad - C_n^2 \text{ штук}$$

$$P(A_i A_j A_u) = q^3 \cdot \frac{1}{n(n-1)(n-2)} = \frac{q^3}{A_n^3} \quad - C_n^3 \text{ штук}$$

$$P\left(A_{i_1} \dots A_{i_n}\right) = \frac{q^n}{A_n^n} = \frac{q^n}{n!} \quad - 1 \text{ штука}$$

$$\boxed{=} \quad q - q^2 \cdot \frac{1}{2!} + q^3 \cdot \frac{1}{3!} - \dots + (-1)^{n-1} \frac{q^n}{n!}$$

$$P(\bar{A}) = 1 - P(A) = 1 - q + q^2 \cdot \frac{1}{2!} - q^3 \frac{1}{3!} + \dots + (-1)^n \frac{q^n}{n!}$$

$$\downarrow n \to \infty$$

$$e^{p-1}$$