$\boxed{3}$ $n = 144$, $p = \frac{1}{2}$

$k = 70$

Решение 1 (биномиальное распределение):

$n \in \mathbb{Z}$ $n \geq 0$ $\Omega = \{(x_1, x_2, \dots, x_n) \mid \forall i = \overline{1,n} \ x_i \in \{1, 0\}\}$

$p \in \mathbb{R}$ $0 < p < 1$ $\forall i = \overline{1,n}$ $p(x_i = 1) = p$

$\xi_n = \sum_{i=1}^{n} x_i$

$\xi_n \sim Bin(p, n)$

$q = 1 - p$

$k \in \mathbb{Z}$ $0 \leq k \leq n$ $p(\xi_n = k) = f(k; n, p) = C_n^k p^k q^{n-k}$

$q = 1 - p = 1 - \frac{1}{2} = \frac{1}{2} = p$

$p(\xi_n = k) = f(k; n, \frac{1}{2}) = C_n^k p^k p^{n-k} = C_n^k p^{k+(n-k)} = C_n^k p^n =$

$= C_n^k \left(\frac{1}{2}\right)^n = \frac{C_n^k}{2^n}$

$p(\xi_n = 70) = f(70; 144, \frac{1}{2}) = \frac{C_{144}^{70}}{2^{144}}$

Решение 2:

$p(\xi_n = k) = \frac{C_n^k}{\overline{A}_2^n} = \frac{C_n^k}{2^n}$

$p(\xi_n = 70) = \frac{C_{144}^{70}}{2^{144}}$

Ответ:

$$\boxed{\xi_n \sim Bin(n, p) \quad p(\xi_n = 70) = \frac{C_{144}^{70}}{2^{144}}}$$