$$\text{Bernoulli}\ \beta^p_n = \sum_{n}^{k=0} \begin{bmatrix} n \\ k \end{bmatrix} p^k\, \overbrace{1-p}^{\,n-k}\, \varepsilon_k \begin{cases} np \\ np\,(1-p) \end{cases}$$

$$\text{Poisson}\ \pi_\alpha = e^{-\alpha} \sum_{0 \leqslant k} \frac{\alpha^k}{k!}\, \varepsilon_k \begin{cases} \alpha \\ \alpha \end{cases}$$

$$\text{Gauss}\ \nu = \left(2\pi\sigma^2\right)^{-1/2} e^{-\overbrace{x-\alpha}^{2}/2\sigma^2}\, dx \begin{cases} \alpha \\ \sigma^2 \end{cases}$$

$$\text{Cauchy}\ \frac{\alpha}{\pi}\, \overbrace{x^2+\alpha^2}^{-1} \quad \text{no EW}$$

$$\Omega \xrightarrow[\text{ZV}]{X} \mathbb{R}$$

$$\text{BlIdmass}\ \underbrace{P \rtimes X}_{B} = P_{X^{-1}B}$$

$$\text{E-Wert}\ \int X = \int_P^{\Omega} X = \int_{P \rtimes X}^{\mathbb{R}} \imath$$

$$\text{Varianz}\ \int X^2 - \overbrace{\textstyle\int X}^{2} = \int \overbrace{X - \textstyle\int X}^{2} = \int_{P \rtimes X}^{\mathbb{R}} \imath^2 - \overbrace{\int_{P \rtimes X}^{\mathbb{R}} \imath}^{2}$$

$$\text{zentriert}\ \int X = 0$$

$$P_B\,(A) = \frac{P\,(A \cap B)}{P\,(B)}$$

$$\Omega = \bigcup_{0 \leqslant n} B_n$$

$$\text{tot Wahrsch}\ P\,(A) = \sum_{0 \leqslant n} P\,(B_n)\ P_{B_n}\,(A)$$

$$\text{Bayes}\ P_A\,(B_n) = \frac{P\,(B_n)\, P_{B_n}\,(A)}{\sum_{0 \leqslant m} P\,(B_m)\, P_{B_m}\,(A)}$$

$$\text{Gesetz grossen Zahlen}\ \frac{1}{n} \sum_{i}^{n} \overbrace{X_i - \textstyle\int X_i} > 0 \ \text{P-fast sicher}$$