Formulário - Conteúdo da P1: (desde que sejam atendidas as suposições adequadas em cada caso)

$$P(X=x)=\begin{cases}\binom{n}{x}p^x(1-p)^{n-x}, & \text{para } x=0,1,\dots n\\ 0, & \text{caso contrário.}\end{cases} \quad \Rightarrow \quad E(X)=np \quad \text{e} \quad Var(X)=np(1-p)$$

$$P(X=x)=\begin{cases}\dfrac{e^{-\lambda}\lambda^x}{x!}, & \text{para } x=0,1,2,\dots\\ 0, & \text{caso contrário.}\end{cases} \quad \Rightarrow \quad E(X)=\lambda \quad \text{e} \quad Var(X)=\lambda$$

$$f(x)=\begin{cases}\dfrac{1}{(b-a)}, & \text{para } a\leq x\leq b\\ 0, & \text{caso contrário.}\end{cases} \quad \Rightarrow \quad E(X)=\frac{a+b}{2} \quad \text{e} \quad Var(X)=\frac{(b-a)^2}{12}$$

$$f(x)=\begin{cases}\lambda e^{-\lambda x}, & \text{para } x\geq 0\\ 0, & \text{caso contrário.}\end{cases} \quad \Rightarrow \quad E(X)=\frac{1}{\lambda} \quad \text{e} \quad Var(X)=\frac{1}{\lambda^2}$$

$$f(x)=\frac{1}{\sqrt{2\pi\sigma^2}}\exp\left\{\frac{-(x-\mu)^2}{2\sigma^2}\right\} \quad \Rightarrow \quad E(X)=\mu \quad \text{e} \quad Var(X)=\sigma^2$$

$$P(A_i|B)=\frac{P(A_i\cap B)}{P(B)}=\frac{P(B|A_i)P(A_i)}{\sum_{j=1}^{m}P(B|A_j)P(A_j)} \qquad \rho(X,Y)=\frac{E\left[(X-E(X))(Y-E(Y))\right]}{\sqrt{Var(X)Var(Y)}}$$

$$Var\left[\sum_{i=1}^{n}a_iX_i\right]=\sum_{i=1}^{n}a_i^2Var(X_i)+2\sum_{i=1}^{n}\sum_{j>i}a_ia_jCov(X_i,X_j)$$

$$X_1,X_2,\dots,X_n \text{ v.a's i.i.d's} \quad \Rightarrow \quad \frac{\sum_{i=1}^{n}X_i-nE[X]}{\sqrt{nVar[X]}}\xrightarrow[d]{n\to\infty}N(0,1)$$

Formulário - Conteúdo da P2: (desde que sejam atendidas as suposições adequadas em cada caso)

$$\text{Pos}(Q1)=\frac{n+3}{4} \qquad \text{Pos}(Q3)=\frac{3n+1}{4} \qquad S_X^2=\sum_{i=1}^{n}\frac{(X_i-\bar{X})^2}{n-1} \qquad S_{XY}=\sum_{i=1}^{n}\frac{(X_i-\bar{X})(Y_i-\bar{Y})}{n-1}$$

$$r_{XY}=\frac{S_{XY}}{S_XS_Y} \qquad \hat{b}=\frac{S_{XY}}{S_X^2} \qquad \hat{a}=\bar{Y}-\hat{b}\bar{X}$$

$$Var(\bar{X})=\frac{\sigma^2}{n} \qquad T=\sqrt{n}\left(\frac{\bar{X}-\mu}{S_X}\right)\sim t_{n-1}$$

$$X_i\sim \text{Bernoulli(p)} \quad \Rightarrow \quad \sqrt{n}\left(\frac{\hat{p}-p}{\sqrt{p(1-p)}}\right)\xrightarrow[d]{n\to\infty}N(0,1)$$