POPOLAZIONE NORMALE			
$\left(\overline{X}-z_{\alpha/2}\frac{\sigma}{\sqrt{n}},\overline{X}+z_{\alpha/2}\frac{\sigma}{\sqrt{n}}\right)$	Media:varianza nota	$\left(\overline{X}-t_{\alpha/2;n-1}\frac{S}{\sqrt{n}},\overline{X}+t_{\alpha/2;n-1}\frac{S}{\sqrt{n}}\right)$	Media:varianza sconosciuta
$\left(\overline{X}_1-\overline{X}_2-z_{\alpha/2}\sqrt{\frac{\sigma_1^2}{n}+\frac{\sigma_2^2}{m}},\overline{X}_1-\overline{X}_2+z_{\alpha/2}\sqrt{\frac{\sigma_1^2}{n}+\frac{\sigma_2^2}{m}}\right)$	Differenza tra le medie, campioni indip: varianza nota	$\left(\overline{X}_1-\overline{X}_2-t_{\alpha/2;n+m-2}S_p\delta,\overline{X}_1-\overline{X}_2+t_{\alpha/2;n+m-2}S_p\delta\right)$ $\delta=\sqrt{\frac{1}{n}+\frac{1}{m}};S_p^2=\frac{(n-1)S_1^2+(m-1)S_2^2}{n+m-2}$	Differenza tra le medie, campioni indip: varianze uguali ma sconosciute
$\overline{x}_1-\overline{x}_2\pm t'_{\alpha/2}\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}$ $t'_{\alpha/2}=\frac{\frac{s_1^2}{n_1}t_1+\frac{s_2^2}{n_2}t_2}{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}$	$t_1=t_{\alpha/2}$ (n_1-1) g.l. $t_2=t_{\alpha/2}$ (n_2-1) g.l.	Formula approssimata: differenza tra le medie, campioni indip. varianze diverse	
$\left(\frac{\sum_{i=1}^{n}(X_i-\mu)^2}{\chi^2_{\alpha/2;n}},\frac{\sum_{i=1}^{n}(X_i-\mu)^2}{\chi^2_{1-\alpha/2;n}}\right)$	Varianza: media nota	$\left(\frac{(n-1)S^2}{\chi^2_{\alpha/2;n-1}},\frac{(n-1)S^2}{\chi^2_{1-\alpha/2;n-1}}\right)$	Varianza: media sconosciuta
$\left(\frac{1}{F_{\alpha/2;n-1,m-1}}\frac{S_1^2}{S_2^2},F_{\alpha/2;m-1,n-1}\frac{S_1^2}{S_2^2}\right)$	Rapporto tra le varianze		
POPOLAZIONE DI BERNOULLI			
$\left(\overline{X}-z_{\alpha/2}\sqrt{\frac{\overline{X}(1-\overline{X})}{n}},\overline{X}+z_{\alpha/2}\sqrt{\frac{\overline{X}(1-\overline{X})}{n}}\right)$	Campioni grandi	$\overline{X}_1-\overline{X}_2\pm z_{\alpha/2}\sqrt{\frac{\overline{X}_1(1-\overline{X}_1)}{n_1}+\frac{\overline{X}_2(1-\overline{X}_2)}{n_2}}$	Campioni grandi: differenza tra proporzioni
POPOLAZIONE ESPONENZIALE			
$\left(\frac{2}{\chi^2_{\alpha/2;2n}}\sum_{i=1}^{n}X_i,\frac{2}{\chi^2_{1-\alpha/2;2n}}\sum_{i=1}^{n}X_i\right)$	Parametro θ di una popolazione con media θ		
QUANTILI			
Normale	Chi quadro	T di Student	Fisher
$P(Z\ge z_\alpha)\equiv\int_{z_\alpha}^{\infty}f_Z(x)dx=\alpha$	$P(X\ge\chi_{\alpha,\nu}^{2})\equiv\int_{\chi_{\alpha,\nu}^{2}}^{\infty}f_X(x)dx=\alpha$	$P(T\ge t_{\alpha,\nu})\equiv\int_{t_{\alpha,\nu}}^{\infty}f_T(x)dx=\alpha$	$P(Y\ge F_{\alpha;\nu_2,\nu_1})=\alpha$ $F_{1-\alpha;\nu_1,\nu_2}=\frac{1}{F_{\alpha;\nu_2,\nu_1}}$
NORMALE MULTIVARIATA			
DENSITA' DI PROBABILITA'			MOMENTI CONDIZIONATI
$C=\begin{pmatrix}\sigma_1^2 & \sigma_{12}\\ \sigma_{12} & \sigma_2^2\end{pmatrix}$, $\sigma_i^2=Var(X_1)$ $\sigma_{12}=\mathrm{cov}(X_1,X_2)$, $\rho=\frac{\sigma_{12}}{\sigma_1\sigma_2}$ $f(x_1,x_2)=\frac{1}{2\pi\sigma_1\sigma_2\sqrt{1-\rho^2}}\exp\left\{-\frac{1}{2(1-\rho^2)}\left[\left(\frac{x-m_1}{\sigma_1}\right)^2+\left(\frac{x-m_2}{\sigma_2}\right)^2-2\rho\left(\frac{x-m_1}{\sigma_1}\right)\left(\frac{x-m_2}{\sigma_2}\right)\right]\right\}$			$E(X_1\vert X_2=x_2)=m_1+\rho\frac{\sigma_1}{\sigma_2}(x_2-m_2)$ $Var(X_1\vert X_2=x_2)=\sigma_1^2(1-\rho^2)$

	Regressione Y=aX+b	
$S_{xx}=\sum_{i=1}^{n}(x_i-\bar{x})^2 \qquad S_{xy}=\sum_{i=1}^{n}(x_i-\bar{x})(y_i-\bar{y})=\sum_{i=1}^{n}x_i y_i-n\overline{xy}$	$\hat{a}=\bar{y}-\hat{b}\bar{x} \qquad \hat{b}=\frac{S_{xy}}{S_{xx}}$ $\hat{\sigma}^2=\frac{1}{n}\sum_{i=1}^{n}\left[y_i-\left(\hat{a}+\hat{b}x_i\right)\right]^2=\frac{S_{yy}-\hat{b}S_{xy}}{n}=\frac{SS_R}{n}$	$\hat{y}=\bar{y}+\frac{S_{xy}}{S_{xx}}(x-\bar{x})$
Intervalli confidenza	$\left(\hat{A}-t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)}\left(\frac{1}{n}+\frac{\bar{x}^2}{S_{xx}}\right)},\hat{A}+t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)}\left(\frac{1}{n}+\frac{\bar{x}^2}{S_{xx}}\right)}\right)$ $\left(\hat{B}-t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)S_{xx}}},\hat{B}+t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)S_{xx}}}\right)$	E(Y(x_0)|x_0)): $\left(\hat{A}+\hat{B}x_0\pm t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)}\left[\frac{1}{n}+\frac{(x_0-\bar{x})^2}{S_{xx}}\right]}\right)$ Y(x_0) $\left(\hat{A}+\hat{B}x_0\pm t_{\alpha/2;n-2}\sqrt{\frac{SS_R}{(n-2)}\left[1+\frac{1}{n}+\frac{(x_0-\bar{x})^2}{S_{xx}}\right]}\right)$
Test	$T_{a_0}=\frac{(\hat{A}-a_0)}{\sqrt{\frac{S_R}{(n-2)}\left(\frac{1}{n}+\frac{\bar{x}^2}{S_{XX}}\right)}}$ $T_{b_0}=(\hat{B}-b_0)\sqrt{\frac{(n-2)S_{xx}}{SS_R}}$	$R^2=\frac{S^2_{xY}}{S_{xx}S_{YY}}=1-\frac{SS_R}{S_{YY}}$ $U=\frac{1}{2}\ln\frac{1+R}{1-R}\overset{approssimativamente}{\approx}N\left(\frac{1}{2}\ln\frac{1+\rho}{1-\rho},\frac{1}{n-3}\right)$
	ANOVA	
a 1 via	$\frac{n}{\sigma^2}\sum\left(\bar{X}_{i\bullet}-\bar{X}_{\bullet\bullet}\right)^2\equiv\frac{SS_F}{\sigma^2}\approx\chi^2_{k-1}$	$\sum_{i=1}^{k}\sum_{j=1}^{n}\left(X_{ij}-\bar{X}_{i\bullet}\right)^2/\sigma^2=SS_E/\sigma^2\approx\chi^2_{k(n-1)}$
a 2 vie $SS_A=n\sum_{i=1}^{k}\left(\bar{X}_{i\bullet}-\bar{X}_{\bullet\bullet}\right)^2$	$SS_B=k\sum_{j=1}^{n}\left(\bar{X}_{\bullet j}-\bar{X}_{\bullet\bullet}\right)^2$	$SS_E=\sum_{i=1}^{k}\sum_{j=1}^{n}\left(X_{ij}-\bar{X}_{i\bullet}-\bar{X}_{\bullet j}+\bar{X}_{\bullet\bullet}\right)^2$
$F_A=(n-1)\frac{SS_A}{SS_E}\approx F_{\alpha;(k-1),(n-1)(k-1)}$	$F_B=(k-1)\frac{SS_B}{SS_E}\approx F_{\alpha;(n-1),(n-1)(k-1)}$	
	Test del χ^2	
	Bontà di un fit $\chi^2=\sum_{i=1}^{k}\frac{(n_i-n\pi_i)^2}{n\pi_i}\approx\chi^2_{\alpha,k-1}$	
	Indipendenza p_i note $\Xi=\sum_{i=1}^{k}\sum_{m=1}^{l}\frac{\left(N_{im}-np_{i.}p_{.m}\right)^2}{np_{i.}p_{.m}}\overset{n\ grande}{\approx}\chi^2_{kl-1}$ Indipendenza p_i sconosciute $\Xi=\sum_{i=1}^{k}\sum_{m=1}^{l}\frac{\left(N_{im}-n\hat{p}_{i.}\hat{p}_{.m}\right)^2}{n\hat{p}_{i.}\hat{p}_{.m}}\approx\chi^2_{\alpha;(k-1)(l-1)}$	