Datos no agrupados	**Datos agrupados**	**Covarianza**
$\bar{x} = \sum_{i=1}^{n} \frac{x_i}{n}$	$\bar{x} = \frac{1}{n}\sum_{i=1}^{k} f_i m_i$	$S_{xy} = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})$ $r = \frac{S_{xy}}{S_x S_y}$
$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2$	$s^2 = \frac{1}{n-1}\sum_{i=1}^{k} f_i(m_i - \bar{x})^2$	
$R = X_{(n)} - X_{(1)}$	$\tilde{x} = L_i + \frac{\frac{n}{2} - F_{i-1}}{f_i}\cdot a_i$	**Probabilidad**
Diagrama de cajas $RIC = Q_3 - Q_1$ $L_{sup} = Q_3 + 1.5RIC$ $L_{inf} = Q_1 - 1.5RIC$	$Mo = L_i + \frac{f_i - f_{i-1}}{(f_i - f_{i-1}) + (f_i - f_{i+1})}\cdot a_i$	$P(E) = \frac{n(E)}{n(\Omega)}$ $P(B\|A) = \frac{P(B\cap A)}{P(A)}$ $P(A) = \sum_{i=1}^{k} P(B_i)P(A\|B_i)$ $P(B_r\|A) = \frac{P(B_r)P(A\|B_r)}{\sum_{i=1}^{k} P(B_i)P(A\|B_i)}$
	$AC = \frac{X_{(n)} - X_{(1)}}{k}$; AC: Ancho de clase	

Variables aleatorias			
$f(x) \geq 0$		**Momento con respecto al origen**	
Discretas	**Continuas**	**Discretas**	**Continuas**
$\sum_x f(x) = 1$ $F(x) = \sum_{t\leq x} f(t)$	$\int_{-\infty}^{\infty} f(x)\,dx = 1$ $F(x) = \int_{-\infty}^{x} f(t)\,dt$	$E(x^r) = \sum_x x^r f(x)$	$E(x^r) = \int_{-\infty}^{\infty} x^r f(x)\,dx$
		Momento con respecto a la media	
		$\mu_r = \sum_x (X-\mu)^r f(x)$	
		$\sigma^2 = E(x^2) - E^2(x)\,; E(x^2) = \int_{-\infty}^{\infty} x^2 f(x)\,dx$	

Modelos aleatorios discretos		
Distribución Binomial $X \sim B(n,p)$ $P(X = x) = \binom{n}{x} p^x (1-p)^{n-x}$ $E(X) = np\ ;\ V(X) = np(1-p)$		**Distribución Geométrica** $X \sim G(p)$ $P(X = x) = p(1-p)^{x-1}$ $E(X) = \frac{1}{p}\ ;\ V(X) = \frac{1-p}{p^2}$
Distribución Binomial Negativa $X \sim BN(k,p)$ $P(X = x) = \binom{x-1}{k-1} p^k (1-p)^{x-k}$ $E(X) = \frac{k}{p}\ ;\ V(X) = \frac{k(1-p)}{p^2}$	**Distribución Hipergeométrica** $X \sim H(N,n,k)$ $P(X = x) = \frac{\binom{k}{x}\binom{N-k}{n-x}}{\binom{N}{n}}$ $E(X) = \frac{nk}{N}\ ;\ V(X) = \frac{N-n}{N-1}(\frac{nk}{N})(1-\frac{k}{N})$	**Distribución Poisson** $X \sim P(\lambda)$ $P(X = x) = \frac{e^{-\lambda}\lambda^x}{x!}$ $E(X) = \lambda\ ;\ V(X) = \lambda$

Modelos aleatorios continuos		
Distribución Uniforme $X \sim U(a,b)$ $f(x) = \frac{1}{b-a}; a \leq X \leq b$ $E(X) = \frac{a+b}{2}\ ;\ V(X) = \frac{(b-a)^2}{12}$	**Distribución Normal** $X \sim N(\mu,\sigma)$ $f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$	**Distribución normal estándar** $X \sim N(0,1)$ $f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$ $Z = \frac{x-\mu}{\sigma}$; estandarización
Distribución Gamma $X \sim G(\alpha,\beta)$ $f(x) = \frac{1}{\beta^\alpha \Gamma(\alpha)} x^{\alpha-1} e^{-\frac{x}{\beta}}$ $E(X) = \alpha\beta\ ;\ V(X) = \alpha\beta^2$ $\Gamma(n) = (n-1)!\ ; \Gamma(\alpha) = (\alpha-1)\Gamma(\alpha-1)$	**Distribución Exponencial** $X \sim E(\beta)$ $f(x) = \frac{1}{\beta} e^{-\frac{x}{\beta}}$ $E(X) = \beta\ ;\ V(X) = \beta^2$	**Distribución Chi Cuadrado** $X \sim G\left(\alpha = \frac{v}{2}, \beta = 2\right)$ $f(x) = \frac{1}{2^{\frac{v}{2}}\Gamma(\frac{v}{2})} x^{\frac{v}{2}-1} e^{-\frac{x}{2}}$ $E(X) = v\ ;\ V(X) = 2v$