Fórmulas Estadística Descriptiva y Regresión

$$\overline{x} = \frac{\sum x_i n_i}{n} \tag{1}$$

$$s^2 = \frac{\sum (x_i - \overline{x})^2 n_i}{n} = \frac{\sum x_i^2 n_i}{n} - \overline{x}^2 \tag{2}$$

$$cv = \frac{s}{|\overline{x}|} \tag{3}$$

$$g_1 = \frac{\sum (x_i - \overline{x})^3 n_i}{n s^3} \tag{4}$$

$$g_2 = \frac{\sum (x_i - \overline{x})^4 n_i}{n s^4} - 3 \tag{5}$$

$$P_i = l_{i-1} + \frac{F_{P_i} - F_{i-1}}{F_i - F_{i-1}} (l_i - l_{i-1}) \tag{6}$$

$$z = \frac{x - \overline{x}}{s_x} \tag{7}$$

$$s_{xy} = \frac{\sum x_i y_j n_{ij}}{n} - \overline{x} \cdot \overline{y} \tag{8}$$

$$y = \overline{y} + \frac{s_{xy}}{s_x^2}(x - \overline{x}) \qquad \text{y sobre x} \tag{9}$$

$$r^2 = \frac{s_{xy}^2}{s_x^2 s_y^2} \tag{10}$$

$$r = \frac{s_{xy}}{s_x s_y} \tag{11}$$

$$y = a e^{bx} \qquad \text{linearizamos} \qquad \ln y = a + bx \Rightarrow z = a' + bx \tag{12}$$

$$y = a + b \ln x \qquad \text{linearizamos} \qquad y = a + b \ln x \Rightarrow y = a + bt \tag{13}$$

Fórmulas Probabilidad

$$\overline{A \cup B} = \overline{A} \cap \overline{B} \tag{14}$$

$$\overline{A \cap B} = \overline{A} \cup \overline{B} \tag{15}$$

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) \tag{16}$$

$$P(A - B) = P(A) - P(A \cap B) \tag{17}$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)} \tag{18}$$

$$P(A_i|B) = \frac{P(A_i)P(B|A_i)}{\sum_{i=1}^{n} P(A_i)P(B|A_i)} \tag{19}$$

	E	$\overline{E}$
Tratamiento	a	b
Control	c	d

$$RR(E) = \frac{a/(a+b)}{c/(c+d)} \tag{20}$$

$$OR(E) = \frac{a/b}{c/d} \tag{21}$$

	E	$\overline{E}$
Test +	VP	FP
Test -	FN	VN

$$P(+|E) = \frac{VP}{VP + FN} \tag{22}$$

$$P(-|\overline{E}) = \frac{VN}{FP + VN} \tag{23}$$

$$P(E|+) = \frac{VP}{VP + FP} \tag{24}$$

$$P(\overline{E}|-) = \frac{VN}{FN + VN} \tag{25}$$

$$B(n,p) = \binom{n}{x} p^x (1-p)^{n-x} = \frac{n!}{x!(n-x)!} p^x (1-p)^{n-x} \tag{26}$$

$$P(\lambda) = e^{-\lambda} \frac{\lambda^x}{x!} \tag{27}$$