Statistics 3 Equations

Mean …… $\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$

Variance …… $s^2 = \frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n-1}$

Standard Deviation …… $s = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n-1}}$

Mean Deviation …… $MD = \frac{\sum_{i=1}^{n} \left| x_i - \bar{x} \right|}{n}$

Standard Score (Z-Score) …… $Z = \frac{x_i - \bar{x}}{s}$

Coefficient of Correlation (r) …… $r = \frac{\sum_{i=1}^{n} Z_x \times Z_y}{n-1}$

Pearson's Product moment method

Coefficient of Correlation (r) …. $r = \frac{n\sum x_i y_i - \sum x_i \sum y_i}{\sqrt{\left(n\sum x_i^2 - (\sum x_i)^2\right) \times \left(n\sum y_i^2 - (\sum y_i)^2\right)}}$

Least Squares Linear Regression

Slope (m) …… $m = \frac{\sum x_i y_i - \bar{y}\sum x_i - \bar{x}\sum y_i + \bar{x} \times \bar{y}}{(n-1)(s^2)}$

Y-intercept (b) …… $b = \bar{y} - m \times \bar{x}$