



Yates' algorithm— An **algorithm** proposed by Frank Yates in 1937 for calculating **sums of squares** of all the **contrasts** simultaneously from a 2^k **factorial design**. The algorithm is fairly simple and can be easily carried out on a hand-held calculator.

Yates' correction for continuity— This is a procedure for correcting the **chi-square statistic** in a 2×2 **contingency table**. For each **cell**, the difference between the **observed** and **expected frequencies** is reduced by one-half (subtracting 0.5 from the positive difference and adding 0.5 to the negative difference). The general aim is to bring the **distribution** based on discontinuous **frequencies** nearer to the continuous **chi-square distribution**. However, the corrected chi-square distribution approximates more closely the **hypergeometric distribution** obtained by using **Fisher's exact test**. The procedure leads to a **conservative test** and has been the subject of a longstanding controversy among **statisticians**. See also *correction for continuity*.

y axis— Same as *vertical axis* or *ordinate*.

y intercept— The point where the **regression line** for y predicted on the basis of x crosses the **ordinate**. This point marks the location of the regression line.

Youden's index— An index designed to combine the **sensitivity** and **specificity** of a **diagnostic test** into a single number. For a 2×2 **table**, it is calculated by the formula $a/(a + c) + d/(b + d) - 1$, where a , b , c , and d are appropriate **cell counts**.

Youden square— A design constructed by rearranging a **balanced incomplete block design**. It has the property of “two-way control” of a **Latin square**. It is a special type of Latin square in which the number of rows, columns, and treatments are not all equal. If a column or row is deleted from a Latin square, the remaining layout is a Youden square.

Yule's Q — A **measure of association** between two **nominal variables** measured on a dichotomous scale. It is a **symmetric measure of association** calculated for the **data** cross-classified in the form of a 2×2 **table**. Calculated by $(ad - bc)/(ad + bc)$.

y variable— In a **simple regression analysis**, the term is used to refer the **dependent** or **response variable**. In a **scatter diagram**, it is plotted on the **y axis**.