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between groups of variables. They correspond to 'shape'. The distinction is important in **allometry**, and extends by analogy to variables of other types, as in factor analysis.

size of a region or test In the theory of testing statistical hypotheses, the size of a **critical region** is a measure of probability and is the same as probability of an α -error or **error of the first kind**. For composite hypotheses it has sometimes been used to denote the limits of the α -error where no **similar regions** exist.

skew distribution A distribution which is not symmetrical; a distribution for which a measure of **skewness** has some value other than zero.

skew-normal distribution A skew distribution obtained by conditioning on positivity of one component of a bivariate normal variable.

skew regression An obsolete term for **curvilinear regression**.

skewness Asymmetry, in relation to a frequency distribution or a measure of that asymmetry. If a unimodal distribution has a longer tail extending towards lower values of the variable it is said to have negative skewness; in the contrary case, positive skewness.

skip free process A term proposed by Keilson (1962) for a class of random walk where in passing from x_1 to $x_2 > x_1$ all intervening states must be encountered at least once. As stated the process would be positive skip free; the opposite mode, negative skip free, requires the passage from x_2 to $x_1 < x_2$.

Skitovich-Darmois theorem This states (Darmois, 1953; Skitovich, 1954), that if $a_i, b_i, i = 1, \dots, n$, are constant coefficients and X_1, \dots, X_n are independent, but not necessarily identically distributed, scalar random variables, then if

$$\sum_{i=1}^n a_i X_i \quad \text{and} \quad \sum_{i=1}^n b_i X_i$$

are independent, it follows that the random variables for which $a_j b_j \neq 0$ are all normal.

slash distribution A heavy-tailed distribution used in robustness studies and obtained from division of a normal by an independent uniform random variable.

slippage test A significance test of k samples in which the hypothesis is one of homogeneity in the means, as against the alternative that one member or set of members has 'slipped' away from the others. For example, where the samples are observations on an industrial process at successive time points and it is suspected that the magnitude of the variable is systematically moving away from the intended value.

slope ratio assay A general class of biological assay where the dose-response lines for the standard test stimuli are not in the form of two parallel regression