

Glossary

Valid argument In logic, refers to a correctly inferred logical argument.

Variable A symbol that represents unspecified elements of a given set. On a calculator, it refers to the name given to a location in the memory that can be assigned a value.

Variable expression An expression that contains at least one variable.

Variance The square of the standard deviation. When the variance is based on a set of sample scores, it is called the *variance of a random sample* and is denoted by s^2 , and when it is based on the entire population, it is called the *variance of the population* and is denoted by σ^2 . The formulas for variance are

$$s^2 = \frac{\Sigma(x - \bar{x})^2}{n - 1} \quad \sigma^2 = \frac{\Sigma(x - \mu)^2}{n}$$

Velocity An instantaneous rate of change; a directed speed.

Venn diagram A diagram used to illustrate relationships among sets.

Vertex (1) A *vertex* of a polygon is a corner point, or a point of intersection of two sides. (2) A *vertex* of a parabola is the lowest point for a parabola that opens upward; the highest point for one that opens downward; the leftmost point for one that opens to the right; and the rightmost point for one that opens to the left.

Vertex angle The angle included between the legs of an isosceles triangle.

Vertical angles Two angles such that each side of one is a prolongation through the vertex of a side of the other.

Vertical ellipse An ellipse whose major axis is vertical.

Vertical hyperbola A hyperbola whose transverse axis is vertical.

Vertical line A line with undefined slope. Its equation has the form $x = \text{constant}$.

Vertical line test Every vertical line passes through the graph of a function in at most one point. This means that if you sweep a vertical line across a graph and it simultaneously intersects the curve at more than one point, then the curve is not the graph of a function.

Volume A number describing three-dimensional content of a set. Specifically, it is the number of cubic units enclosed in a solid figure.

Vote A decision by a group on a proposal, resolution, law, or a choice between candidates for office.