

Glossary

- Half-life** The time that it takes for a particular radioactive substance to decay to half of its original amount.
- Half-line** A ray, with or without its endpoint. The half-line is said to be closed if it includes the endpoint, and open if it does not include the endpoint.
- Half-plane** The part of a plane that lies on one side of a line in the plane. It is a *closed* half-plane if the line is included. It is an *open* half-plane if the line is not included. The line is the *boundary* of the half-plane in either case.
- Hamiltonian cycle** A path that begins at some vertex and then visits each vertex exactly once, ending up at the original vertex.
- Hamilton's apportionment plan** An apportionment plan in which the representation of a geographical area is determined by finding the quotient of the number of people in that area divided by the total number of people and then the result is rounded as follows: Allocate the remainder, one at a time, to districts on the basis of the decreasing order of the decimal portion of the quotients. This method is sometimes called the *method of the largest fractions*.
- Hare method** Each voter votes for one candidate. If a candidate receives a majority of the votes, that candidate is declared to be a *first-round winner*. If no candidate receives a majority of the votes, then with the *Hare method*, also known as the *plurality with an elimination runoff method*, the candidate(s) with the fewest number of first-place votes is (are) eliminated. Each voter votes for one candidate in the second-round. If a candidate receives a majority, that candidate is declared to be a *second-round winner*. If no candidate receives a majority of the second-round votes, then eliminate the candidate(s) with the fewest number of votes is (are) eliminated. Repeat this process until a candidate receives a majority.
- Hecto-** A prefix meaning 100.
- Heptagon** A polygon having seven sides.
- Hexagon** A polygon having six sides.
- HH method** See *Huntington-Hill's plan*.
- Higher-level language** A computer programming language (e.g., BASIC, PASCAL, LOGO) that approaches the syntax of English and is easier both to use and to learn than machine language. It is also not system-dependent.
- Hindu-Arabic numerals** Same as the usual decimal numeration system that is in everyday use.
- Horizontal ellipse** An ellipse whose major axis is horizontal.
- Horizontal hyperbola** A hyperbola whose transverse axis is horizontal.
- Horizontal line** A line with zero slope. Its equation has the form $y = \text{constant}$.
- Hundred** Ten 10s.

Huntington-Hill's plan An apportionment plan currently in use by the U.S. legislature. It is based on the geometric mean of two numbers, a and b , where a is the value of the exact ratio rounded down and b is the value of the exact ratio rounded up. It rounds down if the exact quota is less than the geometric mean and rounds up if it is greater than the geometric mean.

Hyperbola The set of all points in a plane such that, for each point on the hyperbola, the difference of its distances from two fixed points (called the **foci**) is a constant.

Hyperbolic geometry A non-Euclidean geometry in which a Saccheri quadrilateral is constructed with summit angles acute.

Hypotenuse The longest side in a right triangle

Hypothesis An assumed proposition used as a premise in proving something else.