

Glossary

- Objective function** The function to be maximized or minimized in a linear programming problem.
- Obtuse angle** An angle that is greater than a right angle and smaller than a straight angle.
- Obtuse triangle** A triangle with one obtuse angle.
- Octagon** A polygon with 8 sides.
- Octal numeration system** A numeration system with 8 symbols.
- Odd vertex** In a network, a vertex of odd degree — that is, with an odd number of arcs or line segments connected at that vertex.
- Odds** If $s + f = n$, where s is the number of outcomes considered favorable to an event E and n is the total number of possibilities, then the *odds in favor* of E is s/f and the *odds against* E is f/s .
- One** The first counting number; it is also called the *identity element for multiplication*; that is, it satisfies the property that

$$x \cdot 1 = 1 \cdot x = x$$

for all numbers x .

- One-dimensional coordinate system** A real number line.
- One-to-one correspondence** Between two sets A and B , this means each element of A can be matched with exactly one element of B and also each element of B can be matched with exactly one element of A .
- Online** To be connected to a computer network or to the Internet.
- Open-ended loan** A preapproved line of credit that the borrower can access as long as timely payments are made and the credit line is not exceeded. It is usually known as a credit card loan.
- Open equation** An equation that has at least one variable.
- Open half-plane** See *Half-plane*.
- Operator** A rule, such as negation, that modifies the value of a simple statement, or a rule that combines two simple statements, such as conjunction or disjunction.
- Opposite side** In a right triangle, an acute angle is made up of two sides. The opposite side of the angle refers to the third side that is not used to make up the sides of the angle.
- Opposites** Opposites x and $-x$ are the same distance from 0 on the number line but in opposite directions; $-x$ is also called the *additive inverse* of x . Do not confuse the symbol “ $-$ ” meaning opposite with the same symbol as used to mean subtraction or negative.
- Optimum solution** The maximum or minimum value in a linear programming problem.
- Or** A common translation for the connective of disjunction.
- OR-gate** An electrical circuit that simulates disjunction. That is, the circuit is on when either of two switches is on.

- Order** Refers to the direction that an inequality symbol points. In reference to matrices, it refers to the number of rows and columns in a matrix. When used in relation to a matrix, it is the same as the *dimension* of the matrix.
- Order of an inequality** Refers to a $>$, \geq , $<$, or \leq relationship.
- Order of operations** If no grouping symbols are used in a numerical expression, first perform all multiplications and divisions from left to right, and then perform all additions and subtractions from left to right.
- Order symbols** Refers to $>$, \geq , $<$, \leq in an inequality. Also called inequality symbols
- Ordered pair** A pair of numbers, written (x, y) , in which the order of naming is important. The numbers x and y are sometimes called the *first* and *second components* of the pair and are called the *coordinates* of the point designated by (x, y) .
- Ordered triple** Three numbers, written (x, y, z) , in which the order of the components is important.
- Ordinary annuity** See *Annuity*.
- Ordinary interest** The calculation of interest assuming a year has 360 days. In this book, we assume ordinary interest unless otherwise stated.
- Ordinate** The vertical coordinate in a two-dimensional system of rectangular coordinates, usually denoted by y .
- Origin** The point designating 0 on a number line. In two dimensions, the point of intersection of the coordinate axes; the coordinates are $(0, 0)$.
- Origination fee** A fee paid to obtain a real estate loan.
- Ounce** (1) A unit of capacity in the United States system that is equal to $1/128$ of a gallon. (2) A unit of mass in the United States system that is equal to $1/16$ of a pound.
- Output** A method of getting information out of a computer.
- Output device** Component of a system that allows the output of data. The most common output device is a printer.
- Overlapping sets** Sets whose intersection is not empty.