Graph Types

K_n (Complete)	Every pair of distinct vertices has exactly one edge	$v = n,\ e = \frac{n(n-1)}{2},\ chromatic\ \# = n$
C_n (Cycle)	3+ vertices, each vertex is connected to two others	$v = n,\ e = n,\ chromatic\ \# = even\ 2,\ odd\ 3$
W_n (Wheel)	A cycle graph with a vertex in the center	$v = n,\ e = 2(n-1),\ chrom{:}\ even\ 4,\ odd\ 3$
$K_{m,n}$ (Bipartite)	A graph with a top section and bottom section, Complete bipartite graphs have every top node connected to all bottom nodes.	$v = m + n,\ e = mn,\ chromatic\ \#{:}\ 2$
Q_n (Hypercube)	Exponential	$v = 2^n,\ e = (2^{n-1})n,\ chromatic\ \#{:}\ 2$

Planar graphs can be rearranged so that none of their edges are overlapping.

Euler Path—A path in a graph containing every edge of that graph. It may repeat vertices but may not repeat edges.
Euler Circuit—A Euler Path that begins and ends at the same vertex.

Hamilton Path—A path in a graph that passes through every vertex exactly once. It may not repeat edges and vertices.
Hamilton Circuit—A Hamilton Path that begins and ends at the same vertex.

Boolean Identities

Identity	Name	Identity	Name
$\bar{\bar{x}} = x$	Law of the double complement	$x + yz = (x + y)(x + z)$ $x(y + z) = xy + xz$	Distributive laws
$x + x = x$ $x * x = x$	Idempotent laws	$\overline{(xy)} = \bar{x} + \bar{y}$ $\overline{(x + y)} = \bar{x} * \bar{y}$	De Morgan's Laws
$x + 0 = x$ $x * 1 = x$	Identity laws	$x + xy = x$ $x(x + y) = x$	Absorption Laws
$x + 1 = 1$ $x * 0 = 0$	Domination laws	$x + \bar{x} = 1$	Unit property
$x + y = y + x$ $xy = yx$	Commutative laws	$x\bar{x} = 0$	Zero property
$x + (y + z) = (x + y)$ $x(yz) = (xy)z$	Associative laws	$x + yz = (x + y)(x + z)$ $x(y + z) = xy + xz$	Distributive laws