

Index

- Alpha, 9, 11
 - See also Golden Section.
- Arithmetic progression, 4, 49
- Beta, 9
 - relation to alpha, 11
- Binet form
 - for Fibonacci numbers, 11
 - for Lucas numbers, 26
- Binomial coefficients, 49, 50
- Carroll, Lewis, 57
- Completeness of a sequence, 69
 - Fibonacci, 70, 72
 - Lucas, 73
- Determinant of a matrix, 64
- Divisibility of Fibonacci numbers
 - by Fibonacci numbers, 37
 - by Lucas numbers, 40
- Divisibility of Lucas numbers by
 - Lucas numbers, 40
- Entry point, 45
- Factorial, 50
- Fibonacci numbers, 5
 - Binet form for, 11
 - how to find large, 31
 - with negative subscripts, 28
 - in Pascal's triangle, 50
 - relation to Lucas numbers, 27
 - remainder properties of, 46
 - sum of, 6
- Fibonacci quadratic equation, 11
 - characteristic equation of Q -matrix, 66
- Fibonacci sequence, 5
 - generalized, 7
- Flowers
 - petal count, 79–80
 - spirals in, 81
- Geometric progression, 49
- Geometrical paradox, 57
- Golden Rectangle, 12, 16
- Golden Section, 11
 - in polygons, 23
 - ratios which approximate, 28–29
- Golden Triangle, 22
- Greatest common divisor, 39
- Greatest integer not greater than a number, 30
- Identities for Fibonacci numbers, 7, 52–57, 59–60
 - for Lucas numbers, 54–56, 59–60
- Incompleteness of a sequence, 72–73
- Inequalities, propositions for, 30
- Leaf arrangement, 80–81
- Lucas numbers, 7
 - Binet form for, 26
 - how to find large, 32
 - with negative subscripts, 28
 - relation to Fibonacci numbers, 27
 - remainder properties, 46
- Mathematical induction, 54–55
- Matrix, two-by-two, 62
- Maximal representation, 74–77
- Minimal representation, 74–77
- Parastichies, 82
- Pascal's triangle, 48
 - rising diagonals in, and Fibonacci numbers, 50
- Period of a number in a sequence, 45
- Phyllotaxis, 81
- Q -matrix, 65
- Rabbit problem, 2–6
- Rank of apparition, 45
- Ratios of successive Fibonacci and Lucas numbers, 28–29
- Recurrence (recursive) formula, 4
- Rectangle
 - in geometrical paradox, 57
 - Golden, 12, 16
 - removing triangles from, 14–16
- Remainder properties, 46
- Representation of integers as sums
 - of Fibonacci numbers, 70, 74, 75
 - of Lucas numbers, 73, 76–77
- Residues, 46
- Scalar, 63
- Semicircle, square inscribed in, 24
- Summation notation, 49
- Spiral count, 81
- Square
 - in geometrical paradox, 57
 - inscribed in semicircle, 24
- Triangle(s)
 - with just five parts congruent, 17–19
 - Golden, 22
 - inscribed in a rectangle, 14–16
- Zeckendorf form of representation, 74