

INDEX

- Abscissa, 29
- Absolute value, 28, 201
- Acceleration, 158, 269
- Actuarial tables, 2, 83
- And (logical operator), 179
- Anecdotal data, 4, 210
- Appointments, Doctor's Office, 189
- Appointments, Lunch, 193
- Arts, 4
- Average
 - arithmetic, 32
 - geometric, 40
 - weighted, 32
- Avogadro's number, 275

- Bankroll, 140
- Bayes' Rule, see Multiplication rule
- Bell curve, See Distribution, Normal
- Benford, see Benford's law
- Benford's law, 215
- Bifurcation diagram, 296
- Bird
 - flying habits model, 284
 - spotting model, 259

- Birth Rates, 90
- Brown, Robert, 67
- Brownian Motion, 67, 227, 258, 272
- Bus, waiting for, 204
- Butterfly wing, 293, 298

- Cellular telephone, 243
- Central limit theorem, 59
- Central limit theorem, fuzzy, 60
- Chain letters, 244
- Chaos, 293
- Check sum, 243
- Checkerboard, 22
- Clusters, 24
 - disease, 114
 - neighborhood, 249
- Coin flip game, 2, 7, 10, 13, 37, 67, 69, 109, 117, 136, 144
- Coin flipping, 13
- Collisions, elastic, 269
- Combinations, 107
- Concentration gradient, 78
- Confidence factor, See confidence interval
- Confidence interval (defined), 49

- Confounding variable, 229
- Conservation
 - of energy, 278
 - of momentum, 268
- Contagion, 238
- Cumulative distribution function (CDF)
 - (defined), 49
- Current value, 103

- Deal Or No Deal, 150
- Degrees
 - Kelvin, 272
 - of freedom, 51, 288
 - of separation, 235
- Diffusion, 77
- Disraeli, xiv
- Distribution
 - binomial, See Probability, binomial
 - continuous (defined), 32
 - discrete (defined), 31
 - normal, 54
 - Poisson, 112
 - sampling, 283
 - Student T, 288
 - uniform (defined), 45
- Door (prize behind the), 20

- Einstein, xii, 302, 306
- Energy
 - conservation of, see Conservation of energy
 - kinetic, 268
 - potential, 303
- Entropy, 278, 279
- Error correction, 343
- Error function (ERF), See Function, error
- Event
 - (defined), 6
 - certain (defined), 9
 - random, 5
- Exit criteria, 129
- Expected value (defined), 11, 35
- Exponential
 - decay, 301
 - growth, 301

- Factorial, 107
- Fair Game, 13, 15, 150

- Favorite, 156
- Figure of Merit (FOM), 132
- Fit, best, 212
- Flash memories, 305
- Flow chart, 129, 148, 165
- Fowler-Nordheim equation, 305
- Fractal, 298
- Function (defined), 27
- Function
 - error (ERF), 62, 212
 - probability distribution (PDF), 29
 - wave, 304
 - weighting, 34
- Functional notation, 178

- Gambling, insurance as, 83
- Game show, see Deal or No Deal
- Gantt chart, 142
- Gas constant, 275
- Gaussian distribution, See Distribution, normal
- Graph (defined), 29

- Half-life, 302
- Hall, Monty, 20
- Histogram (defined), 62

- Ideal gas law, 275
- Independent probabilities, see Probabilities, independent
- Insurance
 - as gambling, 83
 - decreasing term, 83
 - life (defined), 82
 - term, 84, 94
- Interconnects, network, 236

- Kelvin, 272

- Laplace, 306
- League of our own, 132
- Life expectancy, 93, 97
- Life tables, 83, 91
- Logistic Map, 294
- Long shot, See Odds, long
- Loop, 128
- Lottery, 10
- Lurking variable, 229

- Marker, 83
- Mean, arithmetic, See Average, arithmetic
- Median, 40, 60, 93
- Medical test results, 186
- Middle Square see PSNG, Middle Square
- Mod(ulus), 121
- Mole, 275
- Momentum, 268
- Monte Carlo simulation, 117, 363, 365, 375, 381, 391
- Monty Hall game, 20
- Most likely (defined), 17
- Multiplication rule, 184
- Mutually exclusive, 180

- Newton, 263, 273
- Nordheim, 305
- Normalization, 95

- Obvious, 269
- Odds
 - (defined), 10
 - even, 10
 - long, 10, 84
- Or (logical operator), 180

- Parimutuel, 156
- Parrondo, 221
- Parrondo's paradox, 221
- Patterns, 1
- Permutations, 107
- Poisson, See Distribution, Poisson
- Polling statistics, 290
- Population average, estimating from a sample, 285
- Potential energy, See Energy, potential
- Precautionary principle, 84
- Premium, 82, 94
- Present value (defined), 94
- Pressure
 - (defined), 273
 - absolute, 276
 - gauge, 276
- Probability
 - (defined), 2, 7, 75
 - binomial, 105
 - conditional, 183
 - distribution function (defined), 2, 27
 - in Quantum Mechanics, 301
- Probabilities, independent, 179
- Problem previously solved, 144
- Propogation, network, 238
- Pseudorandom
 - Numbers, 118
 - number generator (PSNG), (defined), 118
 - number generator, arbitrary distribution, 124
 - number generator, linear congruential, 121
 - number generator, normal distribution, 122

- Quantum Mechanics, 293

- Radioactive, 301
- Random walk (defined), 67
- Ratchet, 227
- Recursive, 89, 107
- Reduced
 - event space, 184
 - sample space, 183
- Rule, 3

- Sample
 - (defined), 25
 - distributions, 283
 - representative, 25
- Sampling, 93, 281
 - biased, 93
- Scalar, 269
- Schroedinger, 305
- Seed, 118
- Semi-logarithmic, 188
- Separation, degrees of, 235
- Shared birthday problem, 190
- Sigma (σ), See Standard deviation
- Significant figures, 253, 265
- Simpson's paradox, 228
- Six degrees of separation, 235
- Social Security, 98
- Special theory of relativity, 306
- Stability, population, 90
- Standard deviation (defined), 44
- Stationary, 3
- Statistical mechanics, 267
- Statistics, polling, 290

- Stock market, 208
- Student T, See Distribution, Student T
- Subscripted variables, 32
- Sum, See summation
- Summation, 33
- Symmetry, axis of, 30

- Telephone system, 242
- Temperature (defined), 272
- Term insurance, See Insurance, term
- Thermodynamics, 276
- Traffic flow, 164
- Traffic light, outsmarting, 159
- Tunneling, 303

- Value pricing, 156
- Variable
 - (defined), 6
 - random (defined), 6

- Variance, 44
- Vector, 268
 - Components, 268
 - velocity, 268

- Walk
 - in the woods, 253
 - random, 67
- Well, potential, 303
- Winning streak, 19

- X axis, see abscissa

- Y axis, see ordinate