

Index

- acceleration due to gravity, 33
- air resistance, 33
- animation, 58, 79
- annotate, 5
- anonymous function, 24
- beats, 51
- block
 - hidden names, 5
- block labels, 18
- blocks, 2
 - Clock, 6, 49
 - Constant, 5
 - Continuous, 2
 - Delay, 40
 - Demux, 57
 - Fcn, 58
 - Gain, 3
 - IC, 58
 - Integrator, 2
 - Math Function, 6
 - Math Operations, 2
 - Parameters, 4
 - Scope, 3
 - Sine Wave, 3, 49
 - Sinks, 2
 - Sources, 2
 - Sum, 3
 - Switch, 40
 - Terminator, 57
 - To Workspace, 14, 61
- Boolean condition, 58
- bouncing ball, 56
- British units, 55
- carrying capacity, 39
- Chua circuit, 85
- circuit, 85
- Configuration Parameters, 5
- cooling, 29
- damped motion, 47
- delay model, 39
- direction field, 65
- direction fields, 23
- disease model, 83
- drag, 33
- dsolve, 19
- enzyme kinetics, 84
- exact solution, 7
- ezplot, 19, 48
- first order
 - linear, 6
 - separable, 6
- forced, damped harmonic oscillator, 49
- free fall, 33
- harmonic oscillator, 45
 - forced, damped, 49
 - damped, 47
- HideAutomaticName, 5
- history, 14
- Hooke's law, 46
- initial condition
 - external, 5
- initial value, 5
- integrating factor, 8
- jerk, 76
- Kirchoff's laws, 85
- labels disappear, 18
- Laplace Transform, 2, 71
- Law of cooling, 29
- Library Browser, 2
- limit cycles, 77
- logistic equation, 39
- Lorenz model, 79
- Lotka, Alfred James, 82
- Lotka-Volterra model, 82
- Malthus, Thomas Robert, 29
- MATLAB, 2
 - Scope Data, 14

- anonymous, 24
- direction field, 23
- dsolve, 19
- ezplot, 19
- function, 22
- hold command, 24
- ode45, 21
- plotting, 11
- quiver, 23
- save image, 14
- syms, 20
- workspace, 11
- matrix form, 57
- Michaelis-Menten kinetics, 84
- modulation, 49
- MS documents, 12, 14
- MyScopeData, 14
- Newton's Law of Cooling, 29
- Newton's Second Law, 46
- Newton, Isaac, 29
- nonlinear pendulum, 58
- numerical error, 7
- ODE, 1
- ode45, 2, 21
 - second order, 64
- partial fraction decomposition, 34
- pendulum, 58
- phase plot, 65
- phase shift, 52
- plot, 11
- plotting images, 12
- population models, 27, 38
 - logistic, 39
 - Lotka-Volterra, 82
 - Malthusian, 29
- prfig, 14
- printing models, 15
- projectile motion, 54
- pursuit curves, 35
- quiver, 65
- range, 56
- Rayleigh, 77
- refine Factor, 5
- Scilab, 16
- Scope parameters, 13
- second order, 43
 - constant coefficients, 44
- simout, 15
- simple harmonic oscillator, 45, 64
- simset, 61
- simulation, 62
- Simulink, 1
- SIR model, 84
- step function, 54
- subsystem, 31, 88
- symbolic, 48
- System Configuration, 5
- terminal velocity, 33
- time variable, 6
- trigonometric identities, 52
- Undetermined Coefficients, 49
- units, 45
- van der Pol, Balthasar, 77
- Verhulst, Pierre François, 39
- Xcos, 16