

Index for Workbook 19

Auxiliary equation _____	33-34	Linearity _____	8, 31
Beam _____	65, 67	Mechanical oscillation	
Beats _____	64	- forced _____	63, 69
Bending moment of beam _____	65	- free _____	57, 69
Complementary function _____	32, 35 37, 38	Newton's law of cooling _____	3, 52
Constant coefficient ODE _____	31	ODE _____	8
Cylinder - radial stress _____	69	Order of ODE _____	8
Deflection of a beam _____	67	Ordinary differential equation _____	8
Damping _____	58-61	Particular integral _____	41-43
Differential equation		Pill dissolving _____	55, 69
- exact _____	17-21	Resonance _____	64
- first order _____	11-29	Separation of variables _____	12-16
- general solution _____	5	Shear force _____	65
- linear _____	8	Shock absorber _____	57
- second order _____	30-50	Simple harmonic motion _____	58
Electric circuit _____	26, 48, 54, 69	EXERCISES	
Escape velocity _____	69	9, 16, 21, 29, 40, 50, 69	
Exact ODE _____	17-21	ENGINEERING EXAMPLES	
First order ODE _____	11-29	1 An RC circuit with single frequency	
General solution _____	5, 32, 47	input _____	26
Homogenous ODE _____	31	2 An LC circuit with sinusoidal input	48
Inhomogenous ODE _____	47, 49	3 Sheer force and bending moment	
Integrating factor _____	21	of a beam _____	65
Kirchhoff's law _____	9	4 Deflection of a uniformly loaded	
		beam _____	67