Homework Assignments for 4th edition of Edwards & Penney

Homework problems are due the second class day after we finish covering the material.

Section	Topic	Homework Assignment Page	Problems
1.1	Differential equations and mathematical models	8	1, 4, 5, 10, 17, 20, 23, 34, 35 (No need to draw graphs for #17, 20, 23)
1.2	Integrals as general and particular solutions	17	1, 5, 7, 8, 13, 25, 26, 31, 35
1.4	Separable equations and applications	43	1,7,10,13,19,23,26,33,37,40,43
1.5	First-order linear equations	56 78	1, 4, 9, 13, 15, 27, 34, 37 1, 5, 13 Please turn in both parts of this assignment together.
1.6	Homogeneous and exact equations	74 78	2, 9, 10, 31, 35 3, 7, 17 Please turn in both parts of this assignment together.
2.4	Numerical approximation: Euler's method		Problem on class handout
2.6	The Runge-Kutta method		Problem on class handout
1.3	Slope fields and solution curves	27	1, 2, 7. Use the MATLAB utility *dirfield*
2.2	Equilibrium solutions and stability	98	1, 3, 6, 8, 9, 11, 21. In 1-11 draw the phase line and solution curves separately. **Do not solve for x(t).** Instead, find lim x(t) assuming x(0)=1.
2.1	Population models	87	10, 11, 13, 21, 30. Hint for # 21: See equation (7) on p. 82. The units of P are millions of people.
2.3	Acceleration-velocity models	108	1, 2, 3, 7, 12
3.1 3.2	Introduction: Second-order linear equations General solutions of linear equations	158 170	3, 9, 33-41 odd 21, 23 Please turn in both parts of this assignment together.
3.3	Homogeneous equations w. constant coefficients	183	1-15 odd, 25, 27, 29
3.5	Nonhomogeneous equations	210	1, 3, 7, 9, 24, 27, 47, 52, 58
3.4	Mechanical vibrations	195	1, 4, 15, 20, 34 For # 15 and 20 do not find u(t) and do not draw graphs. For #34 use the results of problems 32 and 33.
3.6	Forced oscillations and resonance	222	1, 8, 11, 17, 19. Do not draw graphs for #1, 8, or 11. For # 17 see (21) on p. 219.
3.7	Electrical Circuits	231	7, 11, 17, 23
4.1	First-order systems and applications	255	1, 5, 7, 11, 18, 24, 26 Do not draw dir field or curves for #11 or 18.
4.3	Numerical methods for systems		Problem on class handout
7.1	Laplace transforms and inverse transforms	450	1, 7, 11-15 odd, 23-31 odd
7.3	Translation and partial fractions	472	1-15 odd. Use any method you like to solve the problems – you need not follow the directions.
7.2	Transformation of initial value problems	462	1, 3, 5, 7, 8, 9
7.4	Derivatives, integrals, and products of transforms	481	1, 6, 7, 8, 37 (Optional assignment)
7.5	Periodic and piecewise continuous input functions	491	1, 5, 9, 13, 17, 33. Do not draw graphs. (Optional assignment)
7.6	Impulses and delta functions	502	1, 7, 15 Do not draw graphs. (Optional assignment)