

Homework Assignments for 3rd edition of Edwards & Penney

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

<u>Section</u>	<u>Topic</u>	<u>Homework Assignment</u>	
		<u>Page</u>	<u>Problems</u>
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	16	1, 5, 7, 8, 13, 25, 26, 31, 35
1.4	Separable equations and applications	41	1,7,10,13,19,23,26,33,37,40,43
1.5	First-order linear equations	54	1, 4, 9, 13, 15, 27, 34, 37
		76	1, 5, 13
			Please turn in both parts of this assignment together.
1.6	Homogeneous and exact equations	71	2, 9, 10, 31, 35
		76	3, 7, 17
			Please turn in both parts of this assignment together.
2.4	Numerical approximation: Euler's method	119	Problem on class handout.
2.6	The Runge-Kutta method	139	Problem on class handout.
1.3	Slope fields and solution curves	26	1, 2, 7 Use the MATLAB utility <i>dirfield</i>
2.2	Equilibrium solutions and stability	96	1, 3, 6, 8, 9, 11, 21. In 1-11 do not solve for $x(t)$. Find $\lim x(t)$ assuming $x(0)=1$.
2.1	Population models	86	10, 11, 13, 21, 30. Hint for # 21: See equation (7) on p. 80. The units of P are millions of people.
2.3	Acceleration-velocity models	106	1, 2, 3, 7, 12
3.1, 3.2	Introduction: Second-order linear equations/ General solutions of linear equations	155	3, 9, 33-41 odd
		167	21, 23
			Please turn in both parts of this assignment together.
3.3	Homogeneous equations w. constant coefficients	180	1-15 odd, 25, 27, 29
3.5	Nonhomogeneous equations	207	1, 3, 7, 9, 24, 27, 47, 52, 58
3.4	Mechanical vibrations	192	1, 4, 15, 20, 34 For # 15 and 20 do not find $u(t)$ and do not draw graphs.
3.6	Forced oscillations and resonance	218	1, 8, 11, 17, 19. Do not draw graphs for #1, 8, or 11. For # 17 see (21) on p. 216.
3.7	Electrical Circuits	228	7, 11, 17, 23
4.1	First-order systems and applications	251	1, 5, 7, 11, 14, 17, 24, 26 Do not draw dir field or curves for #11 or 14.
4.3	Numerical methods for systems	274	Problem on class handout.
7.1	Laplace transforms and inverse transforms	444	1, 7, 11-15 odd, 23-31 odd
7.3	Translation and partial fractions	465	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	455	1, 3, 5, 7, 9, 10
7.4	Derivatives, integrals, and products of transforms	474	1, 6, 7, 8, 37 (Optional assignment)
7.5	Periodic and piecewise continuous input functions	484	1, 5, 9, 13, 17, 33. Do not draw graphs. (Optional assignment)
7.6	Impulses and delta functions	495	1, 7, 15 Do not draw graphs. (Optional assignment)