

# Homework for AMS 27

## Mathematical Methods for Engineers, Fall 2006

### Homework #1

(in all exercises, plots not necessary)

**Ch.1.1:** 6, 15, 24, 28, 35, 38, 43, 46

**Ch.2.1:** 9, 12, 21, 26

**Ch.3.1:** 4, 8, 31, 32, 34

**Ch.3.2:** 1, 11, 14, 16, 26

**Ch.3.3:** 1, 8, 21, 24, 26, 32, 35-37

**Ch.3.4:** 4, 8, 11, 13, 17, 27, 31-38

### Homework #2

**Ch.3.5:** 2, 5, 9, 20, 23, 37-40

**Ch.3.6:** 1, 4, 10, 13, 16, 28, 33, 34, 36, 41, 43-46, 52

**Ch.4.1:** 5, 6, 12, 16, 20, 22, 26, 29, 33

**Ch.4.2:** 2, 9, 23

**Ch.4.3:** 1, 4, 10, 13, 19, 23

### Homework #3

**Ch.4.4:** 3, 6, 10, 15, 18, 29

**Ch.4.6:** 2, 5, 14, 24, 27, 28

**Ch.6.1:** 4, 7, 8, 15, 20, 30, 31, 33, 34, 36

**Ch.6.2:** 2, 5, 20, 22, 29, 31, 37 (extra credit)

**Ch.6.3:** 3, 8

### Homework #4

**Ch.6.3:** 18, 28, 31-33, 39, 40

**Ch.1.2:** 2, 11

**Ch.1.3:** 4, 12, 16, 22

**Ch.1.4:** 2, 4, 22, 23, 29

**Ch.1.5:** 2, 4, 12, 20, 32, 35, 41, 44

**Ch.1.6:** 1, 4, 21, 31, 34, 43 (extra credit), 46 (extra credit), 56 (extra credit), 57

## Homework #5

**Ch.5.1:** 4, 8, 12 (extra credit), 22, 25, 27 (extra credit), 33, 40, 51 (extra credit), 53 (extra credit)

**Ch.5.2:** 1, 4, 9, 14, 24, 27, 30 (extra credit)

**Ch.5.3:** 6, 8, 16, 21, 22, 27, 34, 40, 45, 46 (extra credit)

**Ch.5.4:** 3, 7, 13, 35, 36

## Homework #6

(in all exercises, plots not necessary)

(you can use the method of undetermined coefficients or the method of variation of parameters)

**Ch.5.5:** 3, 13, 16 (extra credit), 34, 39, 45, 48, 56 (extra credit), 58

**Ch.5.6:** 2, 3, 9, 12, 25 (extra credit)

**Ch.7.1:** 4, 8, 9 (extra credit), 14, 17, 28

**Ch.7.2:** 1, 4, 7, 16, 19, 25, 33

**Ch.7.3:** 4, 5, 14, 18, 23 (extra credit), 26, 38

## Homework #7

(in all exercises, plots not necessary)

(you can use the method of undetermined coefficients or the method of variation of parameters)

**Ch.7.5:** 2, 6, 10, 17, 18, 25, 28, 33 ( $v_2$  should be  $v_2 = [0, 0, 1, i]$ ), 34, 38, 39, 42

**Ch.8.1:** 2, 3, 6, 11, 14, 22, 32, 35

**Ch.8.2:** 1, 4, 10, 18, 26

## Homework #8

**Ch.10.1:** 1, 3, 6, 10, 13, 16, 18, 25, 28, 30, 36 (extra credit)

**Ch.10.2:** 4, 15, 18, 21, 26 (extra credit), 29, 32

**Ch.10.3:** 2, 3, 6, 8, 14, 17, 23, 36, 38 (extra credit)

**Ch.10.4:** 2, 10, 11, 16, 19, 26 (extra credit), 32 (extra credit)