

HW 1, Due Week 2

1.1: 1, 4, 5, 6, 9, 15, 19, 27, 29, 30, 32, 33, 34

Reading. Required background. Nothing graded from 1.1.

1.2: 1, **2**, **4**, 5, **6**, 7, 9, **10**, 13, 15, 16, 18,

21, 22, 24, 26, 29, 31, 32, 33, 35, 40, 41

1.3: 2, 3, 5, 6, **8**, 10, 11, 13, **14**, 23, 25, 26, 33

1.4: 2, 3, 4, **6**, 9, **12**, 13, **18**, 19, 20, 21, **22**, **26**, 36,

41, 42, 45, 46, 49, 51, 56, 59

Print Exercise 1.3-8 image at 200% from here:

<http://www.math.utah.edu/~gustafso/s2018/2280/images/exercise1.3-8-EdwardsPenney.jpg>

All homework listed in one file [Here](#).

HW 2, Due Week 3

1.5: 1, 7, **8**, **10**, 13, **18**, **20**, 21, 23, 24, 33,  
**34**, 36, 39

3.7: 1, 2, **4**, 7 [LC and RC circuits, LRC after 3.6]

2.1: 1, 3, 4, 6, **8**, 10, 12, **16**, 22, 23, 33, 37

2.2: 5, 7, 8, 9, **10**, 11, 15, 17, **18**

2.3: 2, 3, 9, **10**, 13, 14, 17, 18, 19, **20**, **22**, 24, 25

All homework listed in one file [Here](#).

HW 3, Due Week 4

No exercises due, only the computer Numerical DE Project (below), which uses the statements from exercises 2.4-6, 2.5-6, 2.6-6.

**2.4:** 2, 3, 4, **6**, 10, 12, 17 Euler's method

**2.5:** 3, 4, 5, **6**, 10, 12 Improved Euler or Heun

**2.6:** 3, 4, 5, **6**, 10, 12 Runge-Kutta, RK4

The source and instructions for this project can be found here:

<http://www.math.utah.edu/~gustafso/s2018/2280/homework/numericalDEproject/numericalDEproject-S2018.pdf>

The due date for this numerical project is Week 7. Submit it with maple lab 1.

All homework listed in one file [Here](#).

HW 4, Due Week 5

**3.1:** 1, 6, 10, 27, 33, **34**, **36**, 37, **38**, 39, **40**, 41, **42**, 43, **46**, **48**, 53

**3.2:** 1, 2, 5, 8, 11, 13, 16, **18**, 19, 20, 21, **22**, 23, 25, 26

**3.3:** 3, 7, **8**, 9, **10**, 11, **16**, 17, 23, 27, 31, **32**, 37, 40

**3.4:** 3, 4, 5, 6, 10, 11, 15, 17, 19, **20**, 21, 33, **34**

**Computer Lab 1, Due Week 5:**

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab1/2280mapleL1-intro-S2018.pdf>

All homework listed in one file Here.

HW 5, Due Week 6

**3.5:** 2, 3, 5, **6**, 10, 11, **12**, 19, 21, **22**, 25, 27, 29, 31, 34, 39,  
43, 45, 47, 51, 52, **54**, 57, **58**, 59

**3.6:** 3, **4**, 5, 7, **8**, 9, **11**, 13, 15, 17, **18**, 20, 21, 22

**3.7:** 1, 2, 4, 7, **12**, 15, **18**, 19 [LRC circuits]

All homework listed in one file [Here](#).

HW 6, Due Week 7

7.1: 1, 3, 7, 9, 11, 13, 17, **18**, 19, **22**, 23, 27, **28**, 29, 31, 40

7.2: 3, 7, 9, **10**, 15, **16**, 17, 19, **20**, 21, 23, **24**, 35, 37

7.3: 3, **6**, 7, 9, **12**, 13, 17, **18**, 20, 23, 27, 28, 29, 30, 32, 34, 37

**Computer Lab 2, Newton Cooling**, Due Week 7. Choose one project.

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab2/2280mapleL2-freezing-pipes-S2018.pdf>

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab2/2280mapleL2-swamp-cooler-S2018.pdf>

All homework listed in one file [Here](#).

HW 7, Due Week 8

7.4:  $\boxed{2}$ , 3, 9, 13, 15, 17,  $\boxed{22}$ , 23, 26, 27, 29, 30,  $\boxed{36}$ , 37

7.5: 3,  $\boxed{4}$ , 7, 9, 11, 13,  $\boxed{14}$ , 21,  $\boxed{22}$ , 25, 27,  $\boxed{28}$ , 31, 33, 34, 37

**Computer Lab 3, Laplace. Due Week 8.:**

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab3/2280mapleL3-laplace-S2018.pdf>  
All homework listed in one file Here.

HW 8, Due Week 9

7.6: 2, 5, 6, 7, 8, 11, 12, 18, 21, 22 [impulses and Laplace]

4.1: 1, 3, 2, 5, 7, 8, 11, 12, 15, 17, 20, 21, 24, 26

4.2: 7, 12, 27; A Laplace or Cayley-Hamilton-Ziebur solution is acceptable.

4.3: 7, 9, 21;

RK4 for systems is found here:

<http://www.math.utah.edu/~gustafso/s2018/2280/lectureslides/numericalVectorMethods.pdf>

For Exercise 4.3-9 and similar computer problems, see all files numerical-4.3\* in the directory

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/maple-examples/>

All homework listed in one file [Here](#).



HW 9, Due Week 10 before Spring Break (Week 11, no classes)

5.1: **16**, 17, **20**, **22**, **24**, 25, **28**

All homework listed in one file [Here](#).

HW 10, due Week 12, after Spring Break

Edition 4:

5.2: , 11, 13, , 21, 27, 29, , 31, 35, 39, 43, 45, 49

5.3: , 9, 13, 19, , 27

5.4: 1, 7, ,

5.5: 1, 3, , 11, , 23,

Edition 5:

5.2: , 11, 13, , 21, 27, 29, , 31, 35, 39, 43, 45, 49

5.4: , 9, 13, 19, , 27

5.5: 1, 7, ,

5.6: 1, 3, , 11, , 23,

Section 5.3 of 5/E is a reference for Chapter 6. No problems due.

**Computer Lab 4, Resonance. Due Week 12.:**

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab4/2280mapleL4-resonance-S2018.pdf>

All homework listed in one file Here.

HW 11 does not exist. Spring Break.  
No Quiz 11. No Lab 11.

All homework listed in one file [Here](#).

HW 12, due Week 13

5.6 [5.7 in edition 5/E]: 1, 13, 15, 19, 23

6.1: 3, 4, 5, 7, 8, 11, 15, 17, 18

6.2: 2, 5, 7, 9, 12, 13, 17, 19, 21, 22, 23, 29

6.3: 5, 7, 8, 9, 10, 11, 18, 19

All homework listed in one file Here.

HW 13, due Week 14

6.4: 1, 3, 4, 8, 9, 10, 11, 13, 14

6.5: Not covered in class, nothing due.

**Computer Lab 5, Brine Tank, Due Week 14:**

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab5/2280mapleL5-brineTank-S2018.pdf>

All homework listed in one file Here.

HW 14, due Week 15

9.1:  $\boxed{6}$ , 7,  $\boxed{10}$ ,  $\boxed{13}$ , 15, 17, 20,  $\boxed{24}$ , 30

9.2: 2,  $\boxed{8}$ , 9,  $\boxed{20}$

9.3: 1,  $\boxed{4}$ , 9,  $\boxed{17}$ ,  $\boxed{20}$

9.4:  $\boxed{1}$ , 7,  $\boxed{9}$ , 13

All homework listed in one file [Here](#).

HW 15, due by 6pm on May 7 under the door JWB 113

9.5: 1, 2, 3, 7, 9

9.6: 1, 5

**Extra Credit Computer Labs 6 and 7, Due May 7:**

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab6/2280mapleL6-narrows-S2018.pdf>

<http://www.math.utah.edu/~gustafso/s2018/2280/maple/lab7/2280mapleL7-earthquake-S2018.pdf>

All homework listed in one file Here.