MATH 141 HW #5:
CHAPTERS 7-10
FALL 2008

Write your name and "Math 141" and clearly separate sections! See the syllabus.
Show work where appropriate, and use "good form and procedure," as in class!
This is due when you take the Final.
Graded out of 25 points.
"*" denotes "See comment below."
Ask me for answers to "evens" and "My Problems" during our main question session.
You should photocopy this for future reference if you don't plan on seeing me again!

Where possible in Chapters 7 and 8, write solutions as ordered pairs, triples, etc.
I encourage you to circle problems and write comments as you go along.
My notes are also fair game for tests. If necessary, read the textbook for more examples.
If you wish, separate chapters and staple and put your name and "Math 141" on each part.
A scientific calculator will be allowed on the Final.

CHAPTER 7

7.1: 7, 9, 11, 13, 39 (#39: solve algebraically, not graphically)

7.2: 9, 15

7.3: See p.522 for graphical approaches to solution sets for systems of three linear equations in three variables.

7.4: 1-4 all, 5-13 odd, 19-29 odd*, 34*, 37*, 41, 60*,

Do My Problem #1: Write the PFD Form for $\dfrac{1}{x^3\left(x-1\right)^2\left(x^2+3\right)^2}$.

Do **not** solve for the unknown constants.

Note on 19-29 odd, 34, 37: You do **not** have to check your results algebraically.

Answer to 34: $\dfrac{2}{x^2+4}+\dfrac{x}{\left(x^2+4\right)^2}$

Note on 60: It is false. Why?

To see why Long Division (or some algebraic trick) must be used when doing PFDs for improper rational expressions, see Writing About Mathematics on p.538.

7.5, 7.6: Skip.

Read p.568, especially if you might be a math major.

Look at #6, 7, 8, and 11 on pp.569-570.

CHAPTER 8

(You may want to look at my online Math 254 notes – the first three chapters.)

8.1: 9, 29, 31, 47, 49, 51-63 odd*, 83

Note: On the exam, you might be forced to use Gaussian elimination with back-substitution or use Gauss-Jordan elimination; know both methods. I encourage you to mix the two methods on this homework.

Look at: 91, 92, See Part I in my Notes.

8.2: 5, 27, 29, 31, 33, 41, 45, 51, 55, 73, 75, 77, 79, 81, 82

Look at: 60 and 62 for business applications.

Look at: 64 for an example of a discrete-time Markov chain in probability theory.

8.3: 1, 13, 19, 21, 25, 39, 41, 45, 49

Look at: 71

8.4: 1, 5, 7, 31 and 37 (also use Sarrus's Rule on 31 and 37), 67, 69, 72, 75, 81, 85

Look at: 91, 92, 93, 86, p.638

8.5: 1, 3

Look at #3, 15 on pp.639-640.

CHAPTER 9

9.1: 1, 3, 5, 7, 11, 17, 19, 25, 37-46 all, 51, 53, 54, 67, 69 and 71 (assume $n \in \mathbf{Z}^+$), 73, 75, 77, 83, 99

Look at 107, 110, 111.

9.2: 1, 3, 5, 11, 19, 31, 39

Look at 85, 97, 102.

9.3: 1, 5, 11, 15, 19, 27, 29, 35, 89, 91, 93

Look at 95: The trick is to start by separating out the 0.3.

Look at 101, 103.

Read about the Multiplier Effect at the end of p.671.

9.4: 11, 41

Look at the boxes on pp.678-9.

9.5: 15, 19, 21, 59*, 87

Note on 59: Review the idea of derivatives in Section 1.5: Notes 1.63 on. What happens as $h \to 0$?

9.6, 9.7: No homework.

Look at #6, 7 on pp.725-6.

CHAPTER 10

10.1: Skip.
10.2: See p.735.

10.3: 19, 23

10.4: No homework, though try to do 5, 7 sometime before you take Calc II.

10.5: Skip.
10.6: Skip.
10.7: No homework; we will review these ideas in 10.8.

10.8: 17, 21

For a more complete treatment of Chapter 10, I encourage you to read my Math 151 (Calculus II) online notes on Chapter 12, Section 13.1, and the first 6 pages of Section 13.3 based on Swokowski's Calculus: The Classic Edition, which is the textbook we use at Mesa.