Math 125 End of Week 5 Newsletter

UPCOMING SCHEDULE:

Friday: Section 7.1/7.2 (Integrating Trig Functions)
Monday: Section 7.2/7.3 (Trig Substitution)
Tuesday: HW Q & A (You should have lots of homework questions!)
Wednesday: Section 7.3/7.4 (Partial Fractions)
Thursday: Worksheet 6 – Partial Fractions
https://www.math.washington.edu/~m125/Worksheets/PartialFractions.pdf
Next Friday: Section 7.4/7.5 (Summary of Integration Techniques)
Worksheet 5 (Integration by parts) Solutions: https://www.math.washington.edu/~m125/outline5.php

HOMEWORK: Closing Wednesday: 5A, 5B (7.1, 7.2), Close Friday: 5C (7.3)

NEW POSTINGS

Here, again, is the course website: https://sites.math.washington.edu/~aloveles/Math125Winter2019/index.html

1. **More Examples of Integration by Parts** (This contains 7 standard problems and 5 extremely challenging problem):
   https://sites.math.washington.edu/~aloveles/Math125Winter2019/IntegrationByPartsPractice.pdf
   Solutions can be found on the course website.
2. **Summary of 7.2**: (summary of trig cases we discussed in class, mostly clever substitution)
   https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-2SummaryOfCases.pdf
3. **A review trig identities and summary of main idea for 7.3:**
   https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-2EssentialTrigIdentities.pdf
4. **Updated table of basic integrals**:
   https://sites.math.washington.edu/~aloveles/Math125Winter2019/CalculusFactSheet2.pdf

OLD EXAMS:

The math departmental exam 2 archive is here: https://www.math.washington.edu/~m125/Quizzes/Q8.php
My personal archive: https://sites.math.washington.edu/~aloveles/Math125Winter2019/LovelessExamArchive.html
Here are some targeted practice problems from old exams on the current material:

for practice using Section 6.5 material (Average value):
Problem 4: https://www.math.washington.edu/~aloveles/Math125Spring2016/f09m125e2.pdf
Problem 1(b): https://www.math.washington.edu/~m125/Quizzes/week8/mid2p.pdf
Problem 5: https://www.math.washington.edu/~aloveles/Math125Spring2016/m125sp06e2.pdf

for practice using Section 7.1 material (integration by parts):
Problem 1(b): https://www.math.washington.edu/~m125/Quizzes/week8/win16_bekyel_2.pdf
Problem 2(b): https://www.math.washington.edu/~m125/Quizzes/week8/win16_pollack_2.pdf
Problem 2(b): https://www.math.washington.edu/~m125/Quizzes/week8/win13_mid2.pdf
Problem 1(b): https://www.math.washington.edu/~aloveles/Math125Spring2016/f09m125e2.pdf
Problem 3(a): https://www.math.washington.edu/~aloveles/Math125Spring2016/f09m125e2.pdf

for practice using Section 7.2 material (trig integrals):
Problem 1(a): https://www.math.washington.edu/~m125/Quizzes/week8/win13_mid2.pdf
Problem 2: https://www.math.washington.edu/~m125/Quizzes/week8/win16_ostroff_2.pdf
Problem 1(b): https://www.math.washington.edu/~aloveles/Math125Spring2016/m125sp06e2.pdf
Problem 3(a): https://www.math.washington.edu/~aloveles/Math125Spring2016/m125sp06e2.pdf

for practice using Section 7.3 material (Trig Substitution):
Problem 3: https://www.math.washington.edu/~m125/Quizzes/week8/mid2a.pdf
Problem 2: https://www.math.washington.edu/~aloveles/Math125Spring2016/w15m125e2.pdf
Problem 1b: https://www.math.washington.edu/~m125/Quizzes/week8/win13_mid2.pdf
Problem 2b: https://www.math.washington.edu/~aloveles/Math125Spring2016/sp13m125e2.pdf
Problem 3: https://www.math.washington.edu/~m125/Quizzes/week8/aut15_burdzy_2.pdf

See the next page for homework hints.

HOMEWORK COMMENTS AND HINTS:

On HW_5A:

Problem 9: Integrate from 0 to t. (Don't forget to plug in the 0 at the end and $e^0 = 1$).

Problem 10: I think it is much easier if you wait to put in the numbers until the end, start by splitting up the integral, and perhaps simplify one of the integrals with a substitution. (If you are thoughtful in how you do your work, it doesn't get messy, but if you aren't careful it does get messy). Note you are asked to integrate from 0 to 60.

On HW_5B: Get out the trig identities and follow the recipes from class!

ON HW_5C: Big Assignment, with a few long problems!

On Problems 5, 6, 7, and 8: You must start by ***completing the square***. I will do at least one full example in lecture and there will be several more in my lecture notes. See the last two pages of this lecture for more examples:

https://sites.math.washington.edu/~aloveles/Math125Winter2018/7-3%20Notes%202%20-%20w18.pdf

On Problems 6 and 8 are especially long (the longest integrals you will compute this term) so give yourself time and lots of paper. Do the substitution, then expand and simplify and you'll get three integrals you can do.

You will avoid lots of headaches in homework 6A if you know all the methods from 7.2 well.

I hope this helps.

- Dr. Andy Loveless