

Math 125 End of Week 6 Newsletter

UPCOMING SCHEDULE:

Friday: Section 7.3/7.4 (Trig Substitution and Partial Fractions)
Monday: No Class - Holiday
Tuesday: HW Q & A (You should have lots of homework questions!)
Wednesday: Section 7.4/7.5 (Partial Fractions and Summary of Integration)
Thursday: Worksheet 7 – Integration Techniques Practice
<https://www.math.washington.edu/~m125/Worksheets/IntegrationTechniques.pdf>

Next Friday: Section 7.7/7.8 (Approximating Integrals and Improper Integrals)
Worksheet 5 (Integration by parts) Solutions: <https://www.math.washington.edu/~m125/outline5.php>
Worksheet 6 (Partial Fractions) Solutions: <https://www.math.washington.edu/~m125/outline6.php>

HOMEWORK: Closing Wed: HW_5C (7.3), Closing Fri: HW_6A,6B (7.4,7.5)

NEW POSTINGS (course website: <https://sites.math.washington.edu/~aloveles/Math125Winter2019/index.html>)

You need to practice, practice, practice integrating. To help you do this, I have made several lists of practice problems:

1. Flowchart I created to organize the integration methods (ONE OF MY MOST POPULAR REVIEW SHEETS):

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/Integration%20Methods%20Flowchart.pdf>

2. A full review of all integration methods:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/IntegrationTechniques.pdf>

Practice on how to start integrating:

30 Random Integrals Directly from Old Exams (for these practice quickly identifying how to start)

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/30RandomIntegralsFromOldSecondMidterms.pdf>

Comments and answers (I tell you how to start and I give the answer)

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/30RandomIntegralsSolns.pdf>

You can also find several other sheets of practice integrals and solution on my website and in my lecture notes (and in your homework). Do lots and lots of problems!!

OLD EXAMS:

The math departmental exam 2 archive is here: <https://www.math.washington.edu/~m125/Quizzes/Q8.php>

Personal exam archive: <https://sites.math.washington.edu/~aloveles/Math125Winter2019/LovelessExamArchive.html>

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

Problem 1a: https://www.math.washington.edu/~m125/Quizzes/week8/win16_bekyel_2.pdf

for practice using Section 7.4 material (Partial Fractions):

Problem 2a: https://www.math.washington.edu/~m125/Quizzes/week8/win13_mid2.pdf

Problem 1a, 2a: <https://www.math.washington.edu/~aloveles/Math125Spring2016/sp13m125e2.pdf>

Problem 2a: https://www.math.washington.edu/~m125/Quizzes/week8/win16_bekyel_2.pdf

Problem 2: <https://www.math.washington.edu/~aloveles/Math125Spring2016/w15m125e2.pdf>

Problem 2a: https://www.math.washington.edu/~m125/Quizzes/week8/win16_pollack_2.pdf

for practice using Section 7.5 material (Combining Integration Techniques):

Problem 1: <https://www.math.washington.edu/~m125/Quizzes/week8/mid2a.pdf>

Problem 1: https://www.math.washington.edu/~m125/Quizzes/week8/win16_pollack_2.pdf

Problem 1b: <https://www.math.washington.edu/~aloveles/Math125Spring2016/w11m125ce2.pdf>

Problem 2a: <https://www.math.washington.edu/~aloveles/Math125Spring2016/m125sp07e2.pdf>

And there is plenty more practice in the exam archive and elsewhere on my website!!!

See the next page for more links and homework hints.

More Practice:

Over the years, I have made many practice sheets on integration. Here are a few more with full solutions:

1. **11 Practice Problems from one of my old lecture reviews**

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-5IntegralsReview.pdf>

Here are my full solutions:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-5IntegralsReviewSolns.pdf>

2. **12 Practice Problems that I wrote up a few years ago:**

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/12IntegraleexamplesFirstPage.pdf>

Here are my full solutions:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/12integraleexamplesSolns.pdf>

HOMEWORK COMMENTS AND HINTS:

Before you do any homework or exam studying, you first need to get out and make sure you know the following:

1. The updated table of integrals:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/CalculusFactSheet2.pdf>

2. Summary of 7.2 cases:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-2SummaryOfCases.pdf>

3. Summary of Trig Identities and 7.3:

<https://sites.math.washington.edu/~aloveles/Math125Winter2019/7-2EssentialTrigIdentities.pdf>

HINTS:

ON HW_5C (the 7.3 HW):

- 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%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, split it up and do each separately.
- You will avoid lots of headaches in homework 5C if you know all the methods from 7.2 well.

On HW_6A (the 7.4 HW):

- The worksheet will introduce the idea, then we will discuss this in lecture. My integration review sheet also contains a couple additional worked out examples. Try working ahead.

On HW_6B (the 7.5 HW):

- This is more integration practice. Just a lot of random problems. You can start this now. It is a mixture of the different methods we have learned.

I hope some of this helps.

- Dr. Andy Loveless