

## Math 125 End of Week 6 Newsletter

### UPCOMING SCHEDULE:

Friday: Section 7.4 (Partial Fractions)  
Monday: Section 7.4/7.5 (Partial Fractions/Summary of Techniques)  
Tuesday: HW Q & A (You should have lots of homework questions!)  
Wednesday: Section 7.5/7.7 (Approximating Integrals)  
Thursday: Worksheet 7 – Integration Techniques Practice  
<https://www.math.washington.edu/~m125/Worksheets/IntegrationTechniques.pdf>

**Next** Friday: Section 7.8 (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\_6A,6B (7.4,7.5), Close next Fri: HW\_6C (7.5/7.7)

**NEW POSTINGS** (course website: <https://sites.math.washington.edu/~aloveles/Math125Fall2019/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/Math125Fall2019/Integration%20Methods%20Flowchart.pdf>

**2. A full review of all integration methods:**

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/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/Math125Fall2019/30RandomIntegralsFromOldSecondMidterms.pdf>

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

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/30RandomIntegralsSolns.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/Math125Fall2019/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](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](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](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](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](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](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](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/Math125Fall2019/7-5IntegralsReview.pdf>

*Here are my full solutions:*

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/7-5IntegralsReviewSolns.pdf>

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

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/12IntegraleexamplesFirstPage.pdf>

*Here are my full solutions:*

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/12integraleexamplesSolns.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/Math125Fall2019/CalculusFactSheet2.pdf>

2. Summary of 7.2 cases:

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/7-2SummaryOfCases.pdf>

3. Summary of Trig Identities and 7.3:

<https://sites.math.washington.edu/~aloveles/Math125Fall2019/7-2EssentialTrigIdentities.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/Math125Fall2019/7-3%20Notes%20%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