Math 125 End of Week 4 Newsletter

UPCOMING SCHEDULE:

Friday:	Section 6.4 (Work)		
Monday:	Section 6.4/6.5 (Work and Average Value)		
Tuesday:	Bring lots of HW questions (maybe even peek at 7.1)		
Wednesday:	Section 7.1 (Integration by parts)	**Closing Wednesday:**	HW 6.4 and 6.5
Thursday:	Worksheet 5 – By Parts		
Next Friday:	Section 7.2 (Trig Integrals)		

NEW POSTINGS

Students often struggle initially with the concept of "Work" from section 6.4. Part of the problem is there aren't very many examples in the book. So I have created an extensive archive of additional examples which I hope you find useful.

1. **6.4 Summary and Basic Practice Problems:** *Solutions*
2. **6.4 Some Dr. Loveless Old Exam Questions:** *Solutions*
3. **6.4 Challenge Problems** (this is a random assortment of challenging problems from old midterms/finals, don't try these unless you have tried everything else and done the homework) *Solutions*

OLD EXAMS: My Exam Archive

Here are some targeted practice problems from old exams on the current material:

for practice using Section 6.4 material:

Chain:

Problem 5a: https://sites.math.washington.edu/~aloveles/Math125Materials/sp16m125e2.pdf

Problem 6: https://sites.math.washington.edu/~aloveles/Math125Materials/m125sp07e2.pdf

Pumping:

Problem 5: https://sites.math.washington.edu/~aloveles/Math125Materials/f17m125e2.pdf

Problem 5: https://sites.math.washington.edu/~aloveles/Math125Materials/w18m125e2.pdf

Leaky Bucket:

Problem 5: https://sites.math.washington.edu/~aloveles/Math125Materials/w12m125he2.pdf

Problem 5(b): https://sites.math.washington.edu/~aloveles/Math125Materials/f09m125e2.pdf

HOMEWORK COMMENTS AND HINTS:

On 6.4: You'll want to read all my posted examples before you start!

- ***Problems 5***, if I was doing this in class, I would break it up into two problems (the part of the rope that makes it to the top and the part that doesn't). But Webassign requires you type in the set-up all in one box. Not to worry, set them up separately, then combine them into one integral, then write as a Reimann sum.
- ***Problem 10***, Draw a picture of the start of the story and the end. Any cable that is still on the ground didn't get lifted (don't compute anything for that), so the length of the chain doesn't matter, what does matter is now far it got lifted, work with that number.
- ***Problem 11***, This is a challenge problem. Draw a picture of the beginning (when the monkey is at the bottom of the well/rope), then draw a picture of the end (after the monkey has climbed the rope). Label and final a pattern for what has moved.

On 6.5: Most of this should be fast.

- ***Problem 7***: It is not as bad as it looks. Treat L like a number when you integrate, i.e. parts (a)... you should see that you get a formula that looks like $AL^2 + BL + C$ (a quadratic function in L) whose minimum is at its vertex (i.e. $L = -B/(2A)$). Then in part (c), you do the same thing in general and once again you get a quadratic function in L (if you expand it look at it in the right way) whose minimum is at its vertex.

Let's have a strong week.

- Dr. Andy Loveless