5800 Test 2 Study Guide

HW 6 –

Problems 1 and 2:
Showing that a sequence of functions f_n converges to a function f poinwise on some set.

Problems 3 and 4:
Draw a picture of the standard sequence.
Show that the standard sequence converges to f on [a,b].

Problems 5 and 6:
Proofs involving convergence of sequences of functions (pointwise or almost everywhere).

HW 7 –

Problem 1:
Step functions are in L^0 and L^1.

Problem 2:
An example of a function that is not in L^1.

Problems 8 and 9:
Be able to compute the integral of the standard construction.
Use the standard construction to compute the integral of a function in L^1.

Problem 3 – 7:
Proofs involving L^0 and L^1

Problem 10:
Example of a function in L^1(I) using rationals and irrationals.

Problem 11:
This is a good example of a function that is in L^0 and we aren't using the standard construction to approximate it.

Misc:
Look at not only using the standard construction, but also any other ways of showing a function is in L^0.   For example problems 10 and 11 and any ones we did in class.   Then you have a good example base for L^*0* and L^1.

Problem 12:
Don't worry about this one unless you feel like filling in some of the steps that we skipped in class or if you want more practice with sums of coverings.