MATH 515 HOMEWORK–4 DUE AT THE BEGINNING OF CLASS ON THURSDAY, OCTOBER 8.

One goal for this course is for you to develop your skill in effectively communicating mathematics. With this in mind, you should clearly write up your solutions. Solutions with little or no justification will receive little or no credit.

(1) Read chapter 3.

(2) From chapter 3, do problems 3, 19, and 35.

(3) From chapter 3, do problems 21-24. We'll do some of these in class.

(4) Do this on a separate page:

In class we described a 4-cube, and we determined the number of vertices, edges, faces, 3-faces, and 4-faces a 4-cube should have. Give your best description of a 4-dimensional "square" pyramid. This should be a 4-dimensional analog to our usual 3-dimensional pyramid. (We said in class that a 2-dimensional square pyramid is a triangle.) How many vertices, edges, faces, 3-faces, and 4-faces does a 4-dimensional pyramid have? What should the volume of the 4-pyramid be?