For the week of October 06-October 10

1) (a) Using horizontal slices, set up an integral calculating the area of the following shapes:

   i. An equilateral triangle of side length 6.

   ii. A semicircle of radius 5.

   (b) Evaluate each of the previous integrals. You may need to use a trig subtitution $x = \tan(u)$ to evaluate the second integral.

2) In this problem we will calculate the volume of a triangular pyramid of height 6, assuming the base is an equilateral triangle of side length 6.

   (a) First, determine the area of a horizontal slice of height Δh.

   (b) Set up an integral which calculates the volume of the pyramid.