Homework 7: Computing Area and Volume with Slices (due February 27)

1. Compute the area of a circle with radius 3 using horizontal slices (Hint: You can first compute the area of the upper-half circle using horizontal slices). This is number 8 from Section 8.1.

2. Compute the area bounded by the graphs of $y = 4$ and $y = |x|$ using horizontal slices. This is number 10 from Section 8.1.

3. Show that the volume of a sphere with radius R is actually given by the formula $\frac{4}{3}\pi R^3$. To do this you should use horizontal slices to compute it's volume. Again, just as in Problem 1, it's easier to consider the upper-hemisphere first.

4. Use slices to find the volume of the pyramid of height 200 ft. and with a square base of side length 200 ft.