HOMEWORK–Week 11

1. Stewart, section 4.7: #23,27,35,47,51.

2. Stewart, p.243, Applied Project "Where should the Pilot Start Descent?", parts 1,2,3.

3. Cylindrical cans with circular tops and bottoms are to be manufactured to contain a given volume. There is no waste involved in cutting the tin that goes into the vertical side of the can. But the two circular end pieces are cut from a sheet, as shown at the bottom of the page. If the circles for the tops and bottoms of the cans are fit as snugly as possible, each uses up a hexagonal area of tin, as shown in the picture above. First find the area of one of the hexagons in terms of r. (Hint: It consists of 6 equal equilateral triangles.) Now find the ratio of height to radius for the most economical cans. In other words, minimize the total area of tin needed to make a can.