

1. Show that the units of the pressure scale height, R^*T/mg , are indeed units of length
2. Use Earth's albedo and distance from the sun to determine its radiative equilibrium temperature.
3. Suppose the sun's temperature were to drop by 1K, how much would Earth's radiative equilibrium temperature change?
4. Suppose Earth had no atmosphere. Can its albedo be reduced to keep its temperature above freezing?
5. Suppose Earth's temperature were the same but its atmospheric constituent makeup were the same as Jupiter. How large would a pressure scale height be?
6. Derive the density scale height equation given in the notes
7. What is the mass density of air at 925 mb and 80F?
8. What is the mean molecular mass of an air parcel that contains 1% water vapor by volume?