More Dimensional Analysis Problems

Name:

1amu = 1.66 x 10^{-24} g	1 kg = 2.2 pounds	K = C + 273
39.4 inches = 1 meter	1 pound = 454 grams	F = C (9/5) + 32
1 mile = 1.609 km	1 inch = 2.54 cm	

1. If you are 5 feet 11 inches tall, what is your height….
    a. In meters?
    b. In centimeters?

2. If you weighed 180 pounds, what is your mass….
    a. In kilograms?
    b. In grams?
    c. If the body fat is 12%....how many kilograms of fat do you have?

3. If body temperature is 98.6 degrees Fahrenheit, what is your temperature….
    a. In Celsius?
    b. In Kelvin?

4. If your resting heart rate is 65 beats per minute, how many times would your heart beat in 1 year?

5. If you were in better shape and your resting heart rate was only 60 beats per minute, how many times would your heart beat in 1 year?

6. How many miles can light travel in 1 hour if the speed of light is 299792458 meters per second?

7. A 135 pound patient is to receive a medication dose of 0.5 mg per kg of body mass. The medication is available in 120 mg/ml. How many ml of medication should the patient receive?

8. The density of urine ranges from 1.01 g/ml to 1.03 g/ml.
    a. What is the density of a 0.75 liter urine sample that has a mass of 765 g?
    b. Why can urine density change?

9. The diameter of the earth is 12756 km. The average donut has a diameter of 8.9 cm. How many donuts would it take to circle the earth if the donuts were laid side by side?

10. One hydrogen molecule has a mass of 2.016 amu. How many hydrogen molecules would there be in a pound of hydrogen?