

Physics 1506: Health Professions

Units/Geometry quiz

NAME: \_\_\_\_\_

1) In the tuna market in Tokyo's Tsukiji fish market a prized pound of tuna can cost as much as 31,818 Yen per pound. How much did Kiyoshi Kimura thus pay, in Yen, for a 440 pound bluefin tuna? (note for americans...this is just over \$117000 US dollars for one fish!)

ANS:  $14 \times 10^6$  ¥

2) The human genome is made of 23 pairs of strands of dna, each consisting of 140.6 million base pairs. The average spacing between base pairs is about .34 nanometers. Compute, in kilometers, the length of the entire human genome in a single person, using the fact that there are 37.2 trillion cells in the typical human.

ANS:  $\sim \frac{1}{100}$  OF A LYR  
(EXACT:  $8.2 \times 10^{13}$  m)

3) A syringe is 6.7 cm long and has an inside diameter of 0.74 cm. Compute its volume in ml.

ANS: 2.88 ml

4) How much (surface) water is there per person on the earth? Use that the earth's radius is 6400km, the oceans average to about 2 miles deep and cover about 70% of the earth's surface. There are about 7.3 billion humans on the earth, and write your answer in megaliters.

ANS: 158,000 MEGA L