Dougherty Valley HS Chemistry
Dimensional Analysis Practice 2

Worksheet #4

Name: **Period:** **Seat#:**

Instructions: Show your work. Put a box around your final answer so that it can be found easily. You must use Dimensional Analysis to solve. Some answers are provided at the end of the questions. They are underlined.

1) Jules Verne wrote a book called Twenty Thousand Leagues Under the Sea. Using the conversion factors given, convert 20,000 leagues into inches: *4.38×10^9*

12 in = 1 ft	3 ft = 1 yd	1 fathom = 2 yds
1 statute mile = 5280 ft	1 nautical mile = 6080 ft	1 league = 3 nautical miles

2) Convert 73 mi/hr into in/min. *77088*

3) Some owls maintain a territory of up to 3 acres. How many owls could live in a large wooded area of 20 hectacres? *16*

1 hectare = 1 square decameter = 100 square meters = 2.47 acres

4) One 1.6 oz. Package of cinnamon and spice instant oatmeal contains 34 g of carbohydrates. If you had instant oatmeal 6 days a week, how many ounces of carbohydrates would you consume in one week?
16 oz = 1 lb = 454 g = 256 Drams = 7000 grains *7.19*

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5) Many candy gazelle's have 9 grams of fat per bar. If during a "chocolate attack" you ate one 6-pack of bars (0.6 Decabars), how many ounces of fat would you have eaten? If there are approximately 9 calories per gram of fat, how many Calories is this? *1.90, 486*

6) You are riding home from a party and the driver has been drinking. The car is traveling 60 mi/hr. Suddenly a child steps out into the road ahead. Because the driver has been drinking, his reaction time has been slowed by one second. How many feet toward the impeding accident will the car travel before the drive begins to stop? (This is equal to the extra distance it will take to stop the car because the driver has been drinking) *88*

7) In an old episode of the TV program McGyver; a planeload of gold was being transported from the Soviet Union to the United States during WWII. The place crashed in the Arctic region. To prevent the "bad guys" from getting the gold, the pilot and copilot transferred the gold into a cave by stacking it on a door of the crashed plane and dragging the "sled" into the cave. You were led to believe in the episode that they accomplished the move in one trip. The gold was stacked neatly in the shape of a cube, measuring about 1 meter on a side. Calculate the weight, in tons, of one cubic meter of gold. The density of gold is 19.4 g/cc. Would it have been possible for the two pilots to accomplish this feat? Would a plane of WWII vintage be able to carry this much gold? (Volume of a cube = L x W x H and make sure to multiply the units not just the numbers! cc = cubic centimeter, $1cm^3 = 1mL$) *21.4, nope!*