

CHEM 130
Quiz 1 – August 24, 2016
Due in class August 29

Name(s) _____

Complete the following problems from chapter one in your textbook. You may work individually or with one partner. No calculations are required. Limit yourself to one paragraph of text. You may add sketches if you wish.

Problem 91:

Your discussion should focus on Archimedes' determination of the volume of the crown using water displacement. This volume determination allows a comparison of the density of the crown with that of pure gold and a judgment of the composition.

Problem 92:

Each of the ball and tag assemblies has a slightly different density. Since the density of the fluid in the thermometer depends on density, only the ball and tag assemblies with lower density than the external fluid will float at a given temperature. As temperature increases, more balls become less buoyant and sink.

Problem 93:

The construction of the boat allows its mass to be spread out over a larger volume (including the empty space where you sit), effectively decreasing the density to a value below that of water. This larger surface area displaces a smaller mass of water than the boat, allowing it to stay afloat.