Please circle the letter of the best answer for each question.

The following description and picture apply to questions 1 – 3: A straight, uniform board is cut into three differently sized pieces. Each piece has identical width and thickness.
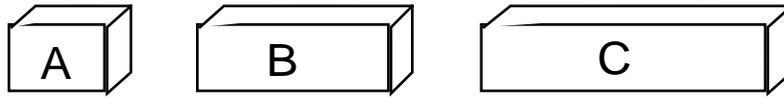
1. Which piece has the greatest volume?

      A. Piece A   B. Piece B   C. Piece C   D. They are all the same.

2. Which piece has the greatest density?

      A. Piece A   B. Piece B   C. Piece C   D. They are all the same.

3. Which piece has the greatest mass?

      A. Piece A   B. Piece B   C. Piece C   D. They are all the same.

4. Two balls, one larger than the other, are placed at equal distances from the center of an an equal arm scale. They balance evenly, as shown below.
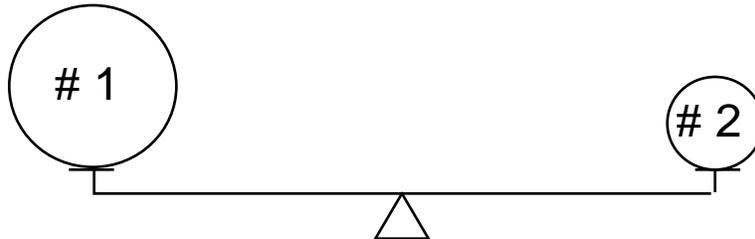
Which ball has the greater density?

      A. Ball #1   B. Ball #2   C. They are both the same   D. Impossible to tell

5. A jeweler cut a small chip off a large, uncut diamond. How does the density of the chip compare with the density of the original diamond?

      A. The density of the chip is the same as the density of the original diamond.

      B. The density of the chip is smaller than the density of the original diamond.

      C.The density of the chip is larger than the density of the original diamond.

      D. Impossible to tell unless the volume and mass of each piece are given.

Why do you think so? _____

6. If there are 300 calories in 100 grams of a certain food, how many calories are there in a 30 gram portion of that food?

      A. 90   B. 100   C. 900   D. 1000   E. 9000

7. Two balls, exactly the same size, are placed at the ends of an equal arm balance with the result shown:
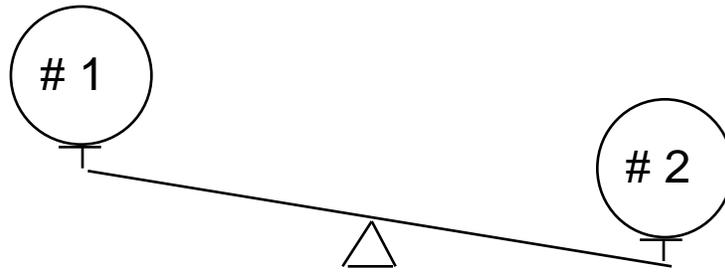
Which ball has the greater density?

A. Ball #1   B. Ball #2   C. They are both the same

D. Impossible to tell from the information given.

The following description applies to questions 8 - 10: When a balloon was taken outside on a very cold day, it was observed to shrink. No air escaped from the balloon.

8. The mass of the air in the balloon after it had shrunk, was

A. greater than before it shrank.   C. the same as before it shrank

B. less than before it shrank.   D. It is impossible to tell from the information given.

9. The volume of the air in the balloon after it had shrunk, was

A. greater than before it shrank.   C. the same as before it shrank.

B. less than before it shrank.   D. It is impossible to tell from the information given.

10. The density of the air in the balloon after it had shrunk, was

A. greater than before it shrank.
B. less than before it shrank.
C. the same as before it shrank.
D. It is impossible to tell from the information given.

Why do you think so? _____

11. An object with a mass of 6.0 grams has a volume of 3.0 cm^3. What is its density?

A. 18 g/cm^3.   B. 2.0 g/cm^3.   C. 0.50 g/cm^3.
D. It is impossible to tell from the information given.

OPTIONAL SECTION:

12. Age last birthday: _____   13. Sex: Male / Female
14. Ethnic group with which you identify, if any: _____