Hair Analysis Lab

<u>I. Title/purpose:</u>
Title:

Background Information: What do you know about the possibility of individualizing a human hair to a single head or body?

Purpose:

Hypothesis: Complete an "If… Then" hypothesis statement to the question.

<u>II. Materials and Methods:</u>
Materials - List and describe the necessary materials to complete this lab

Procedures – list and describe the necessary steps to complete this lab

<u>III. Data</u>:

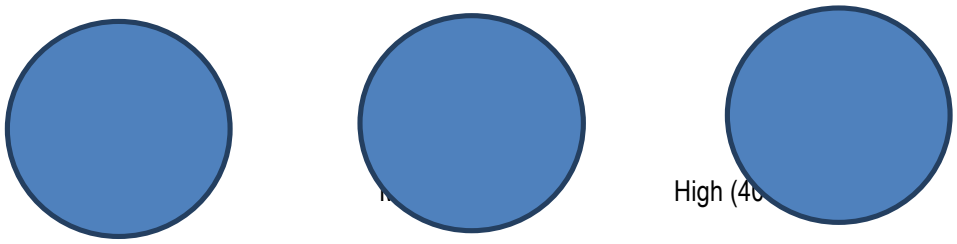
Ensure that you include the following:

- Hair sample label
- Color
- Medulla type
- Medulla pattern
- Condition of hair tip
- Drawing of hair tip
- Condition of hair root
- Drawing of hair root
- Drawing(s) of scales (nail polish)
- Drawing(s) of medulla pattern (wet mount)

<u>IV. Lab Questions:</u>

1. What is the field of view in a microscope?

2. The three circles below represent the field of view for the microscope for three magnifications, 100X, 200X and 400X. Calculate the field of view for these three magnifications. Be sure to label the circles for the proper magnification and show the width of the field of view using mm or µm.



3. What are the units of measurement for length using the metric system? List these in size order by the power of 10 from Km (kilometer) to µm (micrometer). Use the internet to help you find each of these measurement units. Be sure to specify the power of 10 from the basic unit of the meter.

4. When can hair be used to "positively" identify a victim or suspect in a forensic investigation?

5. What is a medullary index and how can it be used to determine the species of the sample?

6. Are all the hairs on a human the same? Explain.

7. What are the characteristics of the cuticle?

8. What are the characteristics of the medulla?

9. What are the characteristics of the root of a hair?

10. Can race, age, or the gender of a person be determined by analysis of hair?
11. Doing some reaearch try to determine what animal hair samples you had.

V. Conclusion: (2-3 paragraphs)
Hypothesis restated; Biological Reasons for Results; Error Analysis; Significance of the results, overall opinion of the lab, include what you would change if you were the instructor.