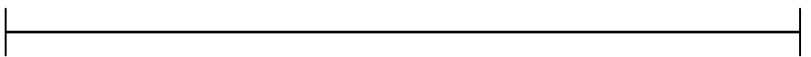
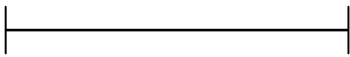
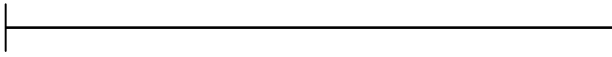


**Lab Basics Worksheet**

Name \_\_\_\_\_ Per. \_\_\_\_\_

**Measurements.** Measure the following lines and record for each unit of measurement.

1. \_\_\_\_\_ cm      \_\_\_\_\_ mm 
2. \_\_\_\_\_ cm      \_\_\_\_\_ mm 
3. \_\_\_\_\_ cm      \_\_\_\_\_ mm 
4. Draw a line that is 10.7 cm long.

5. Draw a line that is 83 mm long.

**Averages.** Calculate the average of each problem set. Round to the nearest specified place value.

6.	Round to the nearest tenth: 27, 81, 53, 94, 62
7.	Round to the nearest whole number: 15, 8, 21, 17, 20
8.	Round to the nearest whole number: 1239, 1106, 958, 1083

**Outliners.** Identify the outlier(s) in each problem set.

9.	27, 81, 73, 94, 62
10.	15, 8, 21, 17, 34
11.	1530, 1100, 950, 1080, 740
12.	7.5, 11.2, 6.7, 8.2, 7.1

**Quantitative vs. Qualitative Data.** Classify each situation as either quantitative data or qualitative data.

13.	dolphin colors range from gray to white
14.	dolphins have smooth skin
15.	there are nine dolphins in a particular pod
16.	dolphins eat the equivalent of 4-5 percent of their body mass
17.	dolphins in a pod engage in play behavior
18.	dolphins most often use a sonar frequency of around 100 kiloHertz

**Identifying Variables.** Read each problem set and answer the following questions.

Problem A. Dr. Imanut wants to examine whether a new drug increases the maze running performance of older rats. Just like aging humans, older rats show signs of poorer memory for new things. Dr. Imanut teaches two groups of older rats to find a piece of tasty rat chow in the maze. One group of rats is given the new drug while they are learning the maze. The second group is not given the drug. One week after having learned the maze he retests the rats and records how long it takes them to find the rat chow.

19. What is the independent variable? (*Hint: What did the researcher allow to vary in this study?*)
  - a. age of rats
  - b. type of maze
  - c. time to complete maze
  - d. presence of new drug
20. What is the dependent variable? (*Hint: What was measured?*)
  - a. age of the rats
  - b. type of maze
  - c. time to complete maze
  - d. presence of new drug
21. What would be an appropriate title for the graph?
  - a. Rats in Mazes
  - b. Rats & Learning
  - c. Learning Time to Complete Maze Using New Drug
  - d. Effects of New Drug on Time

Problem B. A researcher wanted to study the effects of sleep deprivation on physical coordination. The researcher selected 25 year-old male college students and deprived some of the subjects to either 24, 36, or 45 hours of sleep. The subjects were tested on the percentage of skills they can complete.

22. In this study, the independent variable was:
  - a. hours of sleep deprivation
  - b. age of subjects
  - c. gender of subjects
  - d. percentage of skills completed
23. The dependent variable was:
  - a. hours of sleep deprivation
  - b. age of subjects
  - c. gender of subjects
  - d. percentage of skills completed

Problem C. The Mythbusters wanted to know if talking to plants and music helped them grow faster. They used 2-week old pea plants and subjected them to different sound conditions for 30 minutes each day: praises, scolding, heavy metal music, classical music, and silence. They conducted this experiment for 2 weeks, measuring the total centimeters grown.

24. What is the control in the study? \_\_\_\_\_
  25. What is the independent variable in the study? \_\_\_\_\_
  26. What is the dependent variable in the study? \_\_\_\_\_
  27. What are the variations? \_\_\_\_\_
  28. What would be a reasonable title for this graph? \_\_\_\_\_
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