Determination of Average Body Temperature

Student Name: __________________________ Date Submitted: ________________

Names of Lab Partners: ____________________________________________________

**Problem:**
How much variation is there between the temperatures of our group?

**Experiment Procedures**

1. In your lab drawers, you will find 3 thermometers. Remove them from the drawer and plug them into the Lab Pro Interface in inputs 1, 2 and 3.
2. Open Logger Pro and verify that all three probes are registering properly and that they are all working.
3. Set the collection time to 30s with 1 sample/s
4. Have each student hold the metal end of the probe in their closed fist and click record. In your lab journal, write down which probe (1, 2, or 3) you are each using.
5. Store the first run and repeat that test a second time.
6. Now switch probes so that each person is using a different probe. Collect two trials as you did before but with the new probes.
7. Switch probes once more and repeat the two runs.

You should now have a graph with 18 curves on it.

1. Create three separate graphs, one for each person. Modify the graphs so that all 6 of that persons runs are on their graph and only their graph. Each person should have their own graph of their 6 runs.
2. Using the "Stat" button, record the max of each run. Calculate the mean of those 6 maximums. Leave those stat values on the graph.
3. Record that value for yourself and your two partners in your lab journal. Determine the %difference between your mean temperature and those of your two partners and record that in your lab journal.
4. Give your graph you created a title with your name in it and print it along with the stats. Staple the graph into your lab journal.

**Error:**
Enter any things that you think may have caused the experiment to give you meaningless or incorrect data. Consider any problems collecting data. Also consider things that may have unfairly affected the temperatures of the subjects. (2 minimum)

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Analysis Questions:

1. Was this experiment gathering data by direct or indirect measurement? Explain how you know.

2. This activity really did not meet all of the requirements of a true experiment. Why is this not a controlled experiment?

3. What could you change about this activity that would make it a proper controlled experiment?

4. If we repeated this experiment under different conditions, we may have gotten different results. What effect do you think it would have if we tried this same experiment right after lunch instead of first thing in the morning?

5. Would you consider this class a random sample of the school? Assuming it is not, how would you select 300 people in the building to create a random sample if we repeated this experiment?

These last several questions are about you personally, not about the group.

1. Most likely, your temperature was not 98.6. How many degrees above or below the class average was your temperature? (show above as +, below as -)

2. If you went to the nurse right now, would she send you home with a fever? Why or why not?

3. Assuming this is actually your normal temperature, if you went to the nurse with a temperature of 99.5, are you more or less sick than you seem? Should she send you home, even though your fever is not 100? Support your answer with mathematics.