

Answers for Micropipetting and Microfuge PreLab:

1.

a. $1\ \mu\text{l} = .001\ \text{mL}$	d. $1500\mu\text{l} = 1.5\ \text{ml}$
b. $100\mu\text{l} = .01\ \text{mL}$	e. $60\mu\text{l} = 0.06\ \text{ml}$
c. $250\ \mu\text{l} = .25\ \text{ml}$	f. $3\mu\text{l} = 0.003\ \text{ml}$

2.

a. 2.5 ml, 250 μl , 0.025 ml, 2.5 μl
b. 250 μl , 100 μl , 0.015 ml, 0.01 ml

3.

a. setting the micropipette beyond its range will make it inaccurate, and may break the mechanism
b. without the plastic tip, the liquid you are measuring will enter the barrel of the micropipette and contaminate it (whatever that liquid is will continue to drip into whatever is measured after that time)
c. if the micropipette is held vertically, the liquid can run back into the barrel. (see above answer)
d. if the plunger is released too quickly, air bubbles may occur, causing bad measurements

4.

The p20 is pipette b	its range is 0-20 μl
The p200 is pipette c	its range is 20-200 μl
The p1000 is pipette a	its range is 200-1000 μl

5. Reading left to right the measurements should be:
2.5 μl , 7 μl (these could be reversed also), 150 μl , 300 μl

6. If the centrifuge is unbalanced, it can damage the rotor mechanism.

7. Opposite or evenly distributed (see original handout)

8. Eppendorf tubes hold 1.5 ml of liquid, but the students should figure out a way to test this.