

# Micropipetting and Microfuge Prelab

Name \_\_\_\_\_

1. Complete the following conversions:

a.  $1 \mu\text{l} = \underline{\hspace{2cm}} \text{ml}$

b.  $100 \mu\text{l} = \underline{\hspace{2cm}} \text{ml}$

c.  $250 \mu\text{l} = \underline{\hspace{2cm}} \text{ml}$

d.  $\underline{\hspace{2cm}} \mu\text{l} = 1.5 \text{ml}$

e.  $\underline{\hspace{2cm}} \mu\text{l} = 0.06 \text{ml}$

f.  $\underline{\hspace{2cm}} \mu\text{l} = 0.003 \text{ml}$

2. Put the following volumes in order from largest to smallest:

a. 2.5 ml, 250  $\mu\text{l}$ , 0.025 ml, 2.5  $\mu\text{l}$ : \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b. 100  $\mu\text{l}$ , 0.01 ml, 250  $\mu\text{l}$ , 0.015 ml: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

3. Explain the reason for each of the following rules:

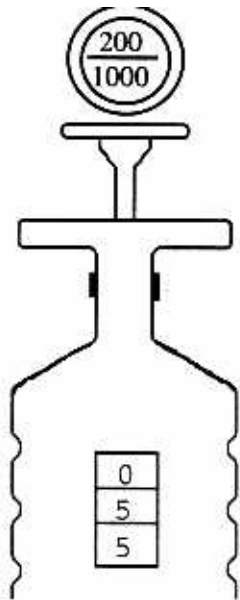
a. Always set the micropipet within its designated range.

b. Always use a plastic tip on the micropipette.

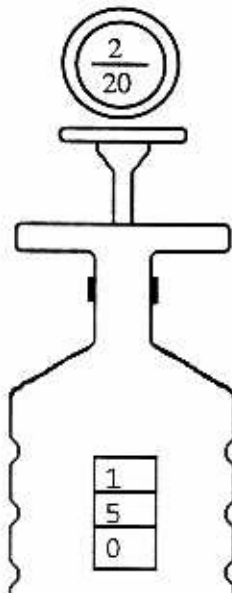
c. Always hold a loaded micropipet in a vertical position.

d. Always release the micropipet plunger slowly.

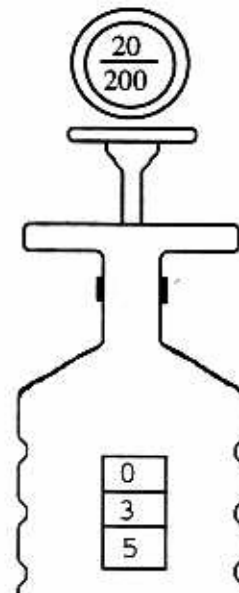
4. Observe the volume of liquid that is measured by micropipets a, b and d below:



a. 550  $\mu\text{L}$



b. 15  $\mu\text{L}$



c. 35  $\mu\text{L}$

Which micropipet (a, b or c) is the p20? \_\_\_\_\_

Which micropipet (a, b or c) is the p200? \_\_\_\_\_

Which micropipet (a, b or c) is the p1000? \_\_\_\_\_

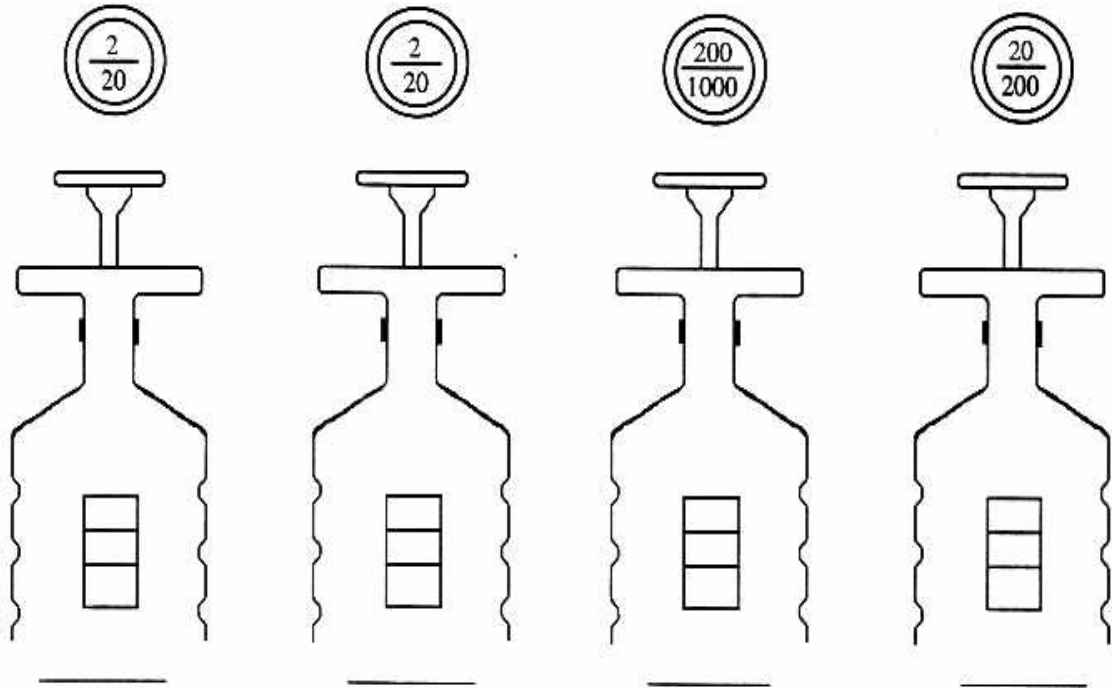
What is its range? \_\_\_\_\_

What is its range? \_\_\_\_\_

What is its range? \_\_\_\_\_

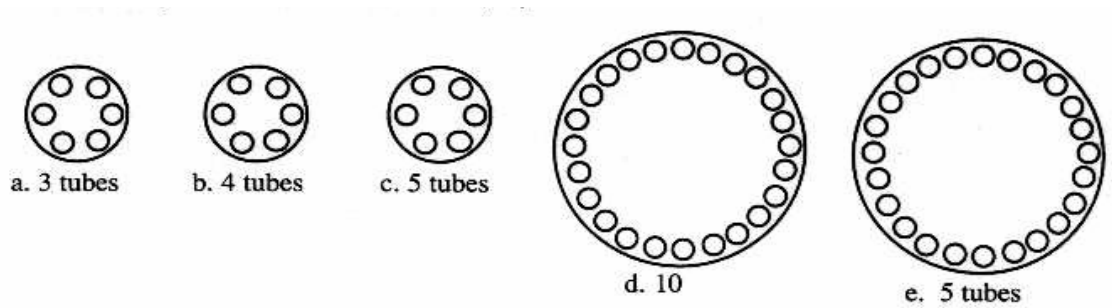
5. Select the appropriate micropipet and show what the dial should read to measure each of the following amounts of liquid. Write the amount on the line beneath each drawing.

- a. 150  $\mu$ l      b. 2.5  $\mu$ l      c. 300  $\mu$ l      d. 7  $\mu$ l



6. Why is it important to balance a centrifuge before turning it on?

7. Show how you would arrange the given number of tubes in each centrifuge to balance the load. If you decide that you must add or remove tubes, explain.



8. What is the approximate volume of an eppendorf reaction tube? \_\_\_\_\_

How could you determine the volume?