

# Simple and Fractional Distillation Lab Report

NAME: _____
PARTNER'S NAME: _____
LAB SECTION: _____
DATE: _____

<b>% SCORE:</b>
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	Points possible	
A. Lab data		
B. Graphs		
C. Questions		
D. Discussion		
E. Prelab quiz	10	
<b>Total</b>		

### **C. QUESTIONS**

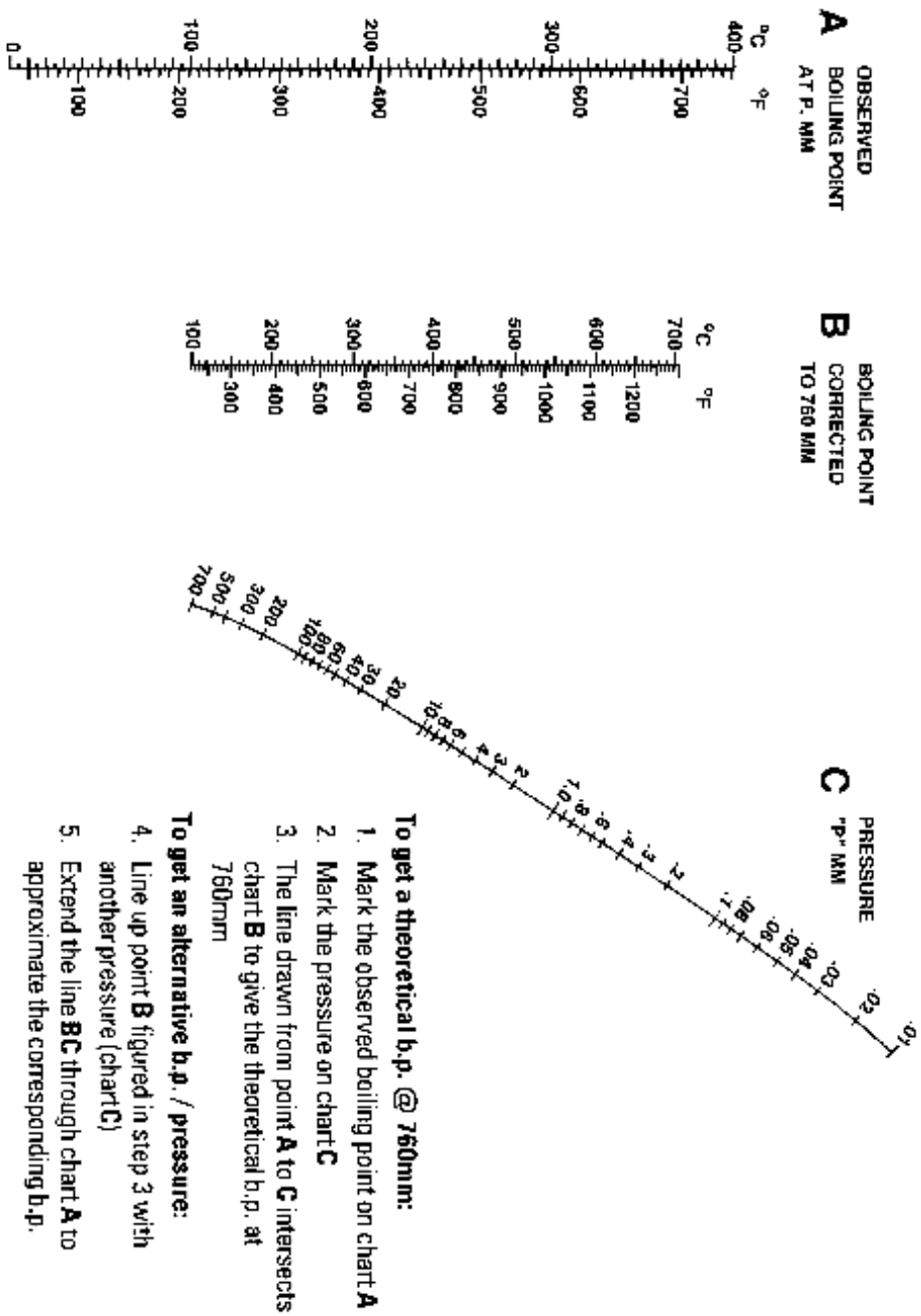
1. What effect does the reduction of external pressure (pressure above the liquid) have on the boiling point of a liquid? Use the nomograph in this report to determine the boiling point of toluene at 50mm Hg.
2. In the pure state, which compound has a higher vapor pressure at room temperature toluene or cyclohexane? Explain
3. Which compound would you predict to have a higher vapor pressure, cyclopentanol or cyclohexene? Explain
4. The amount of liquid that is not accounted for in the distillation but left retained on the glassware is called the column holdup. Calculate the distillation column holdup for both the simple and fractional distillations using the interval volume data. To calculate holdup take initial volume of distillate and subtract volume of all distilled liquid and volume left in still pot. If you were distilling a very small volume of liquid which distillation method might be the better choice?

**D. DISCUSSION** *Discuss which distillation did a better job at separating cyclohexane and toluene. Be sure to cite your data.*

**Compare the shapes of your simple and fractional distillation volume/temperature curves. Which distillation provided a larger volume of purer compound? Compare the simple and fractional bar graphs. Are there any differences in the percentages of the components in intervals for simple and fractional distillation?**

**Overall does one distillation separate the two compounds better than another?**

## PRESSURE-TEMPERATURE NOMOGRAPH



**To get a theoretical b.p. @ 760mm:**

1. Mark the observed boiling point on chart **A**
2. Mark the pressure on chart **C**
3. The line drawn from point **A** to **C** intersects chart **B** to give the theoretical b.p. at 760mm

**To get an alternative b.p. / pressure:**

4. Line up point **B** figured in step 3 with another pressure (chart **C**)
5. Extend the line **BC** through chart **A** to approximate the corresponding b.p.