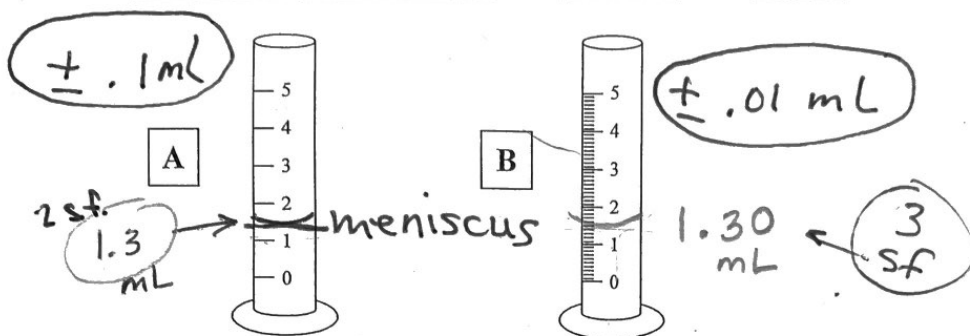


# Measurement with Significant Digits

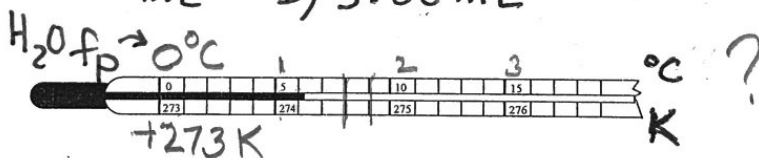
Name KEY Date \_\_\_\_\_ Period \_\_\_\_\_



Use the graduated cylinders to answer the following questions:

- Using cylinder A, to what number of significant digits could liquids be measured?  
2 (1 dec. place)
- Using cylinder B, to what number of significant digits could liquids be measured?  
3 (2 dec. places)
- A student is asked to measure 2.55 mL of water. Which cylinder(s) would be appropriate? Explain your choice. B can measure to 2 decimal places - estimate in hundredths place.
- A student is asked to measure 3 mL of methanol. Which cylinder(s) would be appropriate? Explain your choice. Either?

A) 3.0 mL    B) 3.00 mL



Use the thermometer above to answer the following questions:

- Which temperature scale is shown at the top of the drawing? Celsius
- Which temperature scale is shown at the bottom of the drawing? Kelvin
- A student reported the temperature shown to be 6°C. Is this the correct number of significant digits? Explain. No, can estimate in the tenths place
- In what physical state does water exist at the temperature shown? liquid between 0°C - 100°C  
 $f_p = 0^\circ\text{C} = \sim 32^\circ\text{F}$   
 $b_p = 100^\circ\text{C} = \sim 212^\circ\text{F}$   
Room T = 25°C

9. What is



10. Record

water level

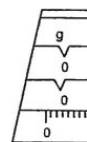
11. Record



12. Record

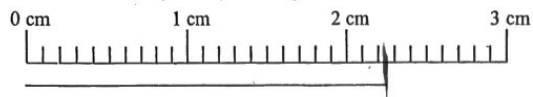
water level

13. Record

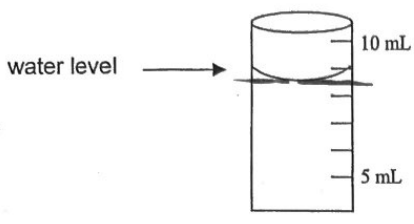


5 sf

9. What is the precise length of the line below the scale? 2.25 cm ± .01 cm  
3 sf

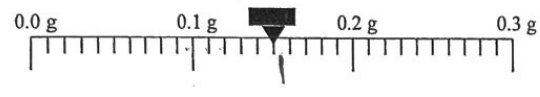


10. Record a precise measurement for the following graduated cylinder. 8.6 mL  
± .1 mL



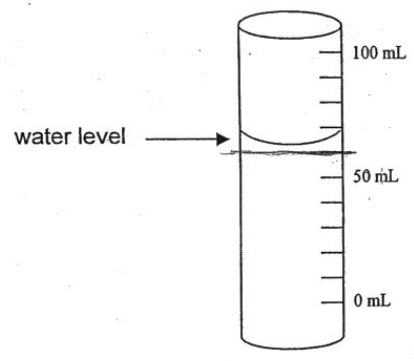
3 sf

11. Record a precise measurement for the following balance. .150 g



± .001 g

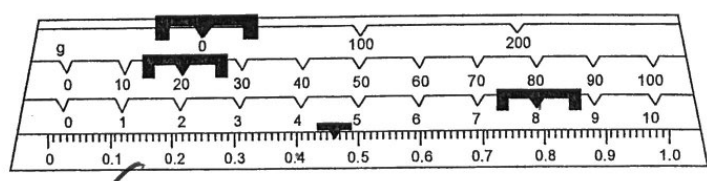
12. Record a precise measurement for the following graduated cylinder. 63 mL



± 1 mL

5 sf

13. Record a precise measurement for the following four-beam balance. 28.461 g



± .001 g

5 sf ( 28.461 g ± .001 g  
28.460  
28.462

s  
ce.

e  
een  
-100°C