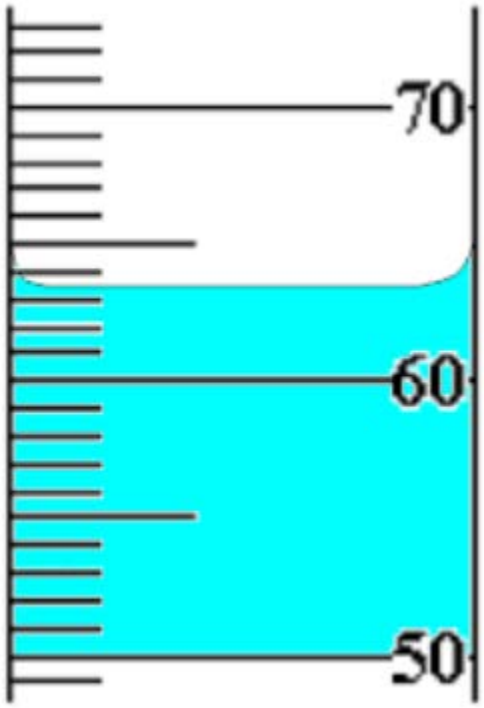
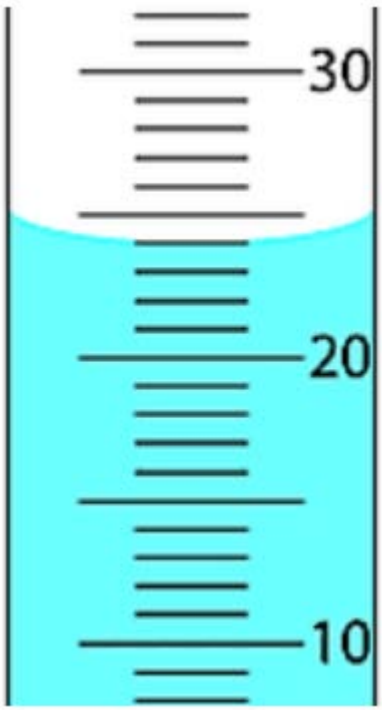
1. **Is any measurement ever exact? _____**

2. **Record the following volume measurements. (1 division = 1 mL).**



V = _____ ± _____ mL



V = _____ ± _____ mL

3. **Underline the sig figs in each of the following measurements:**

24.92 mL	354 K	11000 g
2305 g	10.00 mL	0.00345 mm

4. **Circle the numbers that are treated as exact**:

Measured density of human fat = 0.94 g/cm^3

Mole ratio of hydrogen to oxygen in water = 2

5. Complete the following table:

Decimal Notation	Scientific Notation	# of Sig Figs
93,000,000 miles		
50.00 mL		
0.000000450 g		
134 mL		

6. Carry out each calculation and express the properly rounded result in scientific notation:

$$23.992\ cm\ \times 2.001\ cm\ =\ \_\_\_\_\_ cm^2$$

$$23000\ m\ \times \frac{1\ km}{1000 m}\ =\ \_\_\_\_\_ km$$

$$23.4651\ g\ \times \frac{1\ mol\ C}{12.010\ g\ C}\ =\ \_\_\_\_\_\ mol\ \ C$$

7. Carry out each calculation and express the properly rounded result in decimal notation:

1.23 g C + 0.1 g C = _____g C

1.02 g C + 0.0002 g C = _____ g C

33.2 g C + 1.234 g C = _____g C

8. A given processes is expected to result in a temperature change of 22.8°C. A total of 5 trials resulted in the following data. Complete the table in decimal notation. Round results to the 10ths place.

Trial	Temperature change (°C)
1	23.4
2	22.6
3	24.1
4	23.1
5	22.2
Average	
Sample Standard Deviation	
% Relative Error	
% RSD	
λ	
Upper limit of 95% CI	
Lower Limit of 95% CI	

Note: Carry extra digits through all calculations. Don't round to the 10ths place until all calculations are carried out. This avoids the type of rounding errors that occur in sequential calculations.

Show work.