

ALL work must be shown to receive full credit. **Due at the end of laboratory.**

ICE2.1. What is the difference in meaning between the length 4.2 meters and 4.20 meters?

ICE2.2. Which of the following measurements are inconsistent with precision of the graduated cylinder in your locker? Explain.

30 mL, 42.56 mL, 35 mL, 92.5 mL

ICE2.3 Round off the following numbers to the indicated number of sig figs.

- a) 0.350763 (3 sig figs)
- b) 22.55555 (5 sig figs)
- c) 653.899 (4 sig figs)
- d) 5.0499×10^{-5} (4 sig figs)
- e) 5.0499×10^{-5} (2 sig figs)
- f) 235,000 (2 sig figs)

ICE2.4. Determine the result to the correct number of significant figures.

a) $4.5 \times 4.05 \times 4.50$

b) $\left(\frac{655000}{6.5500} \right)$

c) $\left(\frac{6.00}{33.000} \right)$

d) $\left(\frac{4.5 \cdot 6.3}{7.22} \right)$

e) $\left(\frac{112 \cdot 20}{30 \cdot 63} \right)$

ICE2.5. Determine the result to the correct number of significant figures.

a) $12.1 + 23.1 + 127.01$

b) $43.65 - 23.7$

c) $1237.6 + 23 + 0.12$

d) $4650 + 25 + 200$

e) $4.72 - 3.908$

f) $\left(\frac{12.376 + 12.374}{2.13} \right)$

g) $5.0499 \times 10^{-5} + 6.012 \times 10^{-4}$

h) $1.35 \times 10^3 - 6.234 \times 10^2$

ICE2.6. Perform the following conversions;

a) 73.5 km to miles (use at least 3 conversion factors)

ICE2.6. Perform the following conversions;

b) liquid nitrogen boils at $-196\text{ }^{\circ}\text{C}$, calculate the temperature in $^{\circ}\text{F}$ and K .

c) a fertilizer suggests an application of $2.06 \times 10^{-1} \frac{\text{kg}}{\text{m}^2}$. Convert to $\frac{\text{pounds}}{\text{foot}^2}$.

d) How many gallons in a 575 mLs?

ICE2.7. What is the formula for the compound formed from the following combination of elements;

a) Na and bromine _____

b) magnesium and oxygen _____

c) aluminum and Cl_2 _____

d) iron and sulfur _____

ICE2.8. Complete the following table.

Name of the compound	Formula of the compound
diphosphorus pentoxide	
	PbS
	HF(g)
	NH ₃
diboron trioxide	
copper(I) chloride	
silver sulfide	
	N ₂ Br ₄
potassium peroxide	