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 x 10^{-5} (4 sig figs)
e) 5.0499 x 10^{-5} (2 sig figs)
f) 235,000 (2 sig figs)
ICE2.4. Determine the result to the correct number of significant figures.

a) \(4.5 \times 4.05 \times 4.5\)

b) \(\frac{655000}{6.5500}\)

c) \(\frac{6.00}{33.000}\)

d) \(\frac{4.5 \times 6.3}{7.22}\)

e) \(\frac{112 \times 20}{30 \times 63}\)

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) \(\frac{12.376 + 12.374}{2.13}\)

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 °C, calculate the temperature in °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.

<table>
<thead>
<tr>
<th>Name of the compound</th>
<th>Formula of the compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>diphosphorus pentoxide</td>
<td>PbS</td>
</tr>
<tr>
<td></td>
<td>HF$_{(g)}$</td>
</tr>
<tr>
<td></td>
<td>NH$_3$</td>
</tr>
<tr>
<td>diboron trioxide</td>
<td></td>
</tr>
<tr>
<td>copper(I) chloride</td>
<td></td>
</tr>
<tr>
<td>silver sulfide</td>
<td>N$_2$Br$_4$</td>
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<tr>
<td>potassium peroxide</td>
<td></td>
</tr>
</tbody>
</table>