

CHEM 191 Workshop 1.1: Fundamentals

Name: _____

Please complete this worksheet and turn it in by the end of the class period. Show all work for credit.

Refer to Chemistry: Atoms First Sections 1.4 & 1.6, and Appendices B, C, and D for more information.

1. Write the following numbers in scientific notation:

• 3,100,000

• 100

• 0.1

• 0.0524

• 1 part per million (ppm)

• 5 parts per billion (ppb)

2. Give the name (e.g. *nano*-) and quantity (in scientific notation, e.g. 10^3) indicated by the following SI symbols:

	Name	Quantity
• c	_____	_____
• G	_____	_____
• k	_____	_____
• m	_____	_____
• μ	_____	_____
• n	_____	_____
• M	_____	_____

3. Convert the following and show your work for each.

• 65°F to $^{\circ}\text{C}$ _____ $^{\circ}\text{C}$

• 65°F to K _____ K

• 1 in to millimeters _____ mm

• 1.5 in to meters _____ m

• Typical atmospheric pressure in Cullowhee of 33.23 inHg to hPa _____ hPa

4. Calculate:

• $(2.8 \times 10^{-9}) \times (5.7 \times 10^{-3})$ _____

• $(3.5 \times 10^6) \div (29 \times 10^{10})$ _____

• 35 m \div 408 mm _____

• 35 km - 200 m _____

5. A can of soda contains 12.0 oz of liquid. How many milliliters is this? Show your work.

6. Classify the following measurements as accurate, precise, both, or neither.

- Consistency of the weight of cookies weighing 17.27 g, 13.05 g, 19.46 g, 16.92 g.
- Checking a scale with a 10.00 g weight that reads 13.04 g, 13.12 g, 12.98 g, and 13.43 g.
- Checking a batch of thermometers held in a temperature-controlled room at 20°C with readings of 20.53°C, 19.98°C, 20.26°C, and 20.19°C