**Unit 1: Measurement Worksheet[[1]](#footnote-1)**

**Instructions:**

1. Complete the following questions on a separate sheet of paper.
2. Show all your steps and include units, where appropriate.
3. You may use Unit 1 notes, as well as work with another student.
4. Answers are given at the end of this document.
5. Hand in your work at the end of class.

Questions:

1. Which of the following is a fundamental SI unit?
	1. Millimeter
	2. Meter
	3. Kilometer
	4. Meters/second
2. Of the following temperatures, which is the coldest temperature?
	1. -76°C
	2. 273 K
	3. 0 K



1. To the correct number of significant figures, what is the temperature reading on this thermometer in °C ?
	1. 21°C
	2. 21.7°C
	3. 21.70°C
	4. 22°C
2. If the melting point of titanium metal is 1672°C, what is its melting point in Kelvin?
3. A student measured the diameter of a sphere and calculated the average value. Her measurements are 5.17 cm, 5.15 cm, 5.15 cm, and 5.15 cm. If the true diameter is 6.18 cm, what can be said about the student's results?
	1. It is accurate and precise.
	2. It is accurate but not precise.
	3. It is precise but not accurate.
	4. It is neither precise nor accurate.
4. A sailor circumnavigated the earth and covered a distance of 4, 264, 000 meters. Express this number in scientific notation.
5. Convert 4.300 × 10-3 to ordinary notation.
6. The diameter of a red blood cell is 7 μm. What is this equal to in meters?
	1. 7 x 10-7 m
	2. 7 x 10-6 m
	3. 7 x 10-8 m
	4. 7 x 10-9 m
7. How many significant figures does each of the following measurements have?
	* 0.036 653 m
	* 7.2100 ✕ 10–3 g
	* 72,100 km
	* $25.03
8. Which of the following is the **smallest** value?
	1. 13 centi
	2. 3.0 deci
	3. 3.3 × 103 milli
	4. 1.5 × 106 nano
9. The density of mercury is 13.6 g/cm3. The mass of 38.0 cm3 of mercury is \_\_\_\_ g.
10. Express the answer for each of the following calculations with the correct number of significant figures. Each of the numbers represent a quantity measured by a student in a lab.
	1.  = ?
	2. 
	3. 0.0220 ×  × 12.0
11. Given that 2.54 cm = 1 in, 350 in3 = \_\_\_\_\_\_ L.
12. Digitalis is a drug used to control atrial fibrillation in patients with heart problems. Administration of this drug must be carefully controlled because an over-dosage can be fatal. As a result, dosages are prescribed in terms of mg/kg of body weight. At a dosage of 18μg/kg body weight, how many milligrams of digitalis should be given to a patient who weighs 180 lb. (1 lb = 0.454 kg)
1. Answers will be given in a separate document. [↑](#footnote-ref-1)