Unit 1 Problems Name_____

Show your work on a separate sheet of paper unless otherwise noted.

A. Convert the following measurements into their base units.

(1) 230 nm	(2) 49 875 000 mm	(3) 0.000 000 349 Mg
(4) 4.309 ml	(5) 0.000 597 80 kg	(6) 394.0 Gm
(7) 159 178 pg	(8) 98 754 μs	(9) 764 284 cm

Convert the following numbers into the unit asked for:

(11) .000 238 ML =	mL	(12) 187 000 km =	μm
(13) 498.3 Tg =	Mg	(14) .000 002 525 8 ms =	ps
(15) .005 23 GW =	nW	(16) 3 239 000 000 mN =	kN
(17) .000 000 025 8 Tm =	mm	(18) 9 988.80 Mg =	kg

Change the numbers typed above into proper scientific notation.

B. How many significant digits do each of the measurements in part A have?

Solve the following, using correct significant digits in your answers.

(1) 5.874 + 4.98 + 0.789 + 17.00	(2) 378.492 + 15.7982 + 2.35 + 0.0125
(3) 8.237 - 2.98	(4) 129.45 - 2.379
(5) 197.5 x 187	(6) 12.3 x 4.97
(7) 13.8 ÷ 0.01597	(8) 498.32 ÷ 94

9. What do we know about the last digit in any good measurement?
10. How is precision different from accuracy?
11. What is parallax, and how can it be a problem?
12. Why were the metric units formed, and why have they been so successful?
13. If we have a meterstick with 1 cm as it's smallest markings, how precisely can we measure with it?
14. Name all the key metric prefixes and their abbreviations.
15. Name all the base units in the metric system.