Quiz 1 Practice—Fundamentals of Chemistry

Scientific notation: Put the following in correct scientific notation

1. 56 000 000 000
2. 0.000 98
3. 0.198 765

Scientific notation: Answer each in correct scientific notation and with correct SF:

4. $(7.6 \times 10^{-11})(6.1 \times 10^{9})$
5. $\frac{3.58x10^{-12}}{6.0x10^{8}}$
6. $8.9X10^{7} - 2.1x10^{5}$
7. $3.29x10^{4} + 1.21x10^{5}$
8. $(9.8 \times 10^{-34})(7 \times 10^{14})$
9. $\frac{5.6x10^{8}}{3.19x10^{12}}$

Significant figures: Determine the number of sig figs in the following numbers:

10. 608 cm
11. 200 kg
12. 0.007 00 m
13. 310.000 000 pg

Sig figs: Answer the following calculations with the correct units and sig figs:

14. 4.5m * 3.00 m
15. 8.700cm/3.2 cm
16. 7.80 m + 4 m + 78.2 m
17. 0.64 mm – 4.3 mm - 0.200 mm

Conversions (show all work with units!):

18. How many micrograms are in 45.6 kilograms?

19. How many meters are in 1050 cm?
20. Convert 35.38 mL to L.
21. How many inches are in 4.5×10^{-4} miles? (5280 ft = 1 mi)
22. If I drive at 45 mi/hr, how many minutes will it take me to drive 60 miles?
23. How many seconds are in one century? (1 century = 100 years, 1 year = 365 days)

Measurement: Practice measuring different objects with:

24. Graduated cylinders
25. Rulers
26. Triple beam balance

Precision, accuracy, and observations

27. Describe the picture at right qualitatively and quantitatively.
28. Three different students collected the following data:

	Student A	**Student B**	**Student C**
Trial 1	1.54 g/cm^3	1.40 g/cm^3	1.70 g/cm^3
Trial 2	1.60 g/cm^3	1.68 g/cm^3	1.69 g/cm^3
Trial 3	1.57 g/cm^3	1.45 g/cm^3	1.71 g/cm^3
Average	1.57 g/cm^3	1.51 g/cm^3	1.70 g/cm^3

The accepted value should be 1.59 g/cm^3. Discuss each student's accuracy and precision.