

Sig Figs, Scientific Notation and Chapter 2 Review

For 1 – 4 see the attached worksheet.

1. Be able to properly identify the number of sig figs in a measurement.
2. Adding, subtracting, multiplying and dividing with significant figures.
3. Be able to convert between scientific notation and standard notation.
4. Multiplying and dividing with scientific notation.
5. Be able to properly read and explain how to read rulers, balances and graduated cylinders.
6. How do you determine the volume of a regular shaped object?
7. How do you determine the volume of an irregular shaped object?
8. During the sand lab, why was the total volume (sand and water) smaller than the sum of the individual volumes of the sand, and water?
9. Know how to do the calculations of the sand lab. See #'s 9 – 11 on page 27.
10. In each of the mass labs, why did we take the class data and not just 1 trial?
11. What is the law of conservation of mass? And under what conditions must it be in order to prove it?
12. How did we prove the law of conservation of mass during the 4 labs that we did?
13. What were possible sources of error in the salt lab and the ice lab?
14. In the copper and sulfur lab, how were we able to make it a closed system? What would happen if the system were open?
15. What is the range of accuracy for our balances?
16. What are laws of nature?

Significant Figures and Scientific Notation Review

Determine how many significant figures are in the following.

- 56 m _____
- 9000 mg _____
- 0.024010 km _____
- 0.10 km _____
- 8090 hrs _____
- 800.0 days _____

Perform the following calculations. DO NOT FORGET UNITS!

- $2.25 \text{ cm} * 2.251 \text{ cm} * 2.0000 \text{ cm} =$ _____
- $45.214 \text{ mg} - 90.93 \text{ g} =$ _____
- $125 \text{ mm}^2 / 25 \text{ mm} =$ _____
- $310.500 \text{ min} - 9.0 \text{ min} - 53.21 \text{ min} =$ _____

Convert each number to scientific notation to 2 decimal points. DO NOT FORGET UNITS!

- 0.0452 mm _____
- 90000 L _____
- 0.00000314 _____
- 13.5 s _____

Convert each number to standard form. DO NOT FORGET UNITS!

- $9.98 \times 10^4 \text{ kg}$ _____
- $6.67 \times 10^8 \text{ mi}$ _____
- $2.15 \times 10^{-1} \text{ g}$ _____
- $8.52 \times 10^2 \text{ L}$ _____

Solve the following using significant figures and place in scientific notation. DO NOT FORGET UNITS!

- $3.76 \times 10^9 \text{ m} * 4.14 \times 10^{-9} \text{ m} =$ _____
- $\frac{5.00 \times 10^{16} \text{ km}^2}{2.00 \times 10^{14} \text{ km}} =$ _____
- $5.50 \times 10^{-6} \text{ m} * 1.15 \times 10^6 \text{ m} * 1.00 \times 10^1 \text{ m} =$ _____
- $\frac{6.25 \times 10^{-4} \text{ m}^2}{2.25 \times 10^9 \text{ m}} =$ _____