

Semester 1 Finals Review Sig Figs and Scientific Notation – 20 Questions

Determine how many significant figures are in each of the following measurements.

1. 1841 m _____
2. 5010 g _____
3. 0.01401 kg _____
4. 1900.0 miles _____
5. 0.00900 km _____

Perform the following calculations according to significant figures.

6. $7.14\text{ m} + 1.414\text{ m} + 5.2\text{ m} =$ _____
7. $1.0\text{ cm} \times 1\text{ cm} \times 1.00\text{ cm} =$ _____
8. $6.3215\text{ mi} - 4.21\text{ mi} - 1.563\text{ mi} =$ _____
9. $65.24\text{ m}^3 / 5.1\text{ m} =$ _____
10. $4306\text{ mg} \times 0.00510\text{ mg} =$ _____

Convert to standard form.

11. $5.14 \times 10^5\text{ L} =$ _____
12. $7.21 \times 10^3\text{ mm} =$ _____
13. $1.75 \times 10^{-6}\text{ kg} =$ _____
14. $3.25 \times 10^1\text{ mL} =$ _____
15. $2.56 \times 10^{-9}\text{ kg} =$ _____

Convert to scientific notation.

16. $4500\text{ m} =$ _____
17. $0.0000431\text{ mi} =$ _____
18. $189\text{ g} =$ _____
19. $52.05\text{ L} =$ _____
20. $0.0148\text{ mL} =$ _____

Semester 1 Finals Review Unit Conversions and Density – 10 Questions

Perform the following unit conversions. SHOW ALL YOUR WORK

1. If I ran a total of 430100 mm, how many meters did I run?
2. Convert 3.451×10^5 minutes to weeks
3. If you drink a total of 5.356 quarts of milk, how many L did you drink?
4. Convert 3.782×10^{13} kg to lbs.
5. Mr. Jenks traveled to Pasadena, CA for the Rose Bowl over break. The distance between Detroit and Pasadena is 2273 mi. If the cost of gas is \$3.39 a gallon and the car gets 29 miles per gallon of gas, how much did it cost him to drive?

Perform the following density calculations. SHOW ALL YOUR WORK

6. Calculate the density of a wood block if the mass of the block is 70.14 g and the volume of the block is 75.52 mL.
7. A rectangular block of lead has a mass of 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. What is the density of the lead block in g/mL?
8. Calculate the volume of a wooden block if the mass of the block is 195.7 g and has a density of 0.843 g/cm^3
9. A piece of unknown metal has a density of 8.76 g/cm^3 . If the volume of this piece of metal is 750.0 mL, what is the mass in pounds?
10. A block of lead has dimensions of 45.0 mm by 5.2 cm by 2.36 in. The block has a mass of 1587 g. What is the density of the lead in g/cm^3 ?

Semester 1 Finals Review Mass, Volume and Temperature Conversions

Complete the following

13. How do you find the volume of a regular shaped object? An irregular shaped object?
14. What is the meniscus?
15. What does the law of conservation of mass state?
16. How were we able to prove the law of conservation of mass?
17. What are laws of nature? Give an example.
18. A volume of 60 cm^3 of dry sand is added to 35 cm^3 of water for a total volume of 68 cm^3 .

- a. What is the volume of water that does not go into air spaces between the sand particles?
- b. What is the volume of water that does fill air spaces between the sand particles?
- c. What is the volume of air spaces between the particles in the dry sand?
- d. What is the volume of the sand particles alone?

19. The following data were obtained when copper and sulfur were reacted.

Test tube and balloon	20.484 g
Test tube, balloon, copper and sulfur before reaction	23.440 g
Test tube, and products after reaction	23.386 g

- c. What is the mass of the substances before the reaction?
 - d. What is the change in mass of the reacting substances?
20. Convert $314 \text{ }^\circ\text{F}$ to $^\circ\text{C}$
 21. Convert $-101 \text{ }^\circ\text{C}$ to K
 22. Convert 8001 K to $^\circ\text{C}$
 23. Convert $98.6 \text{ }^\circ\text{C}$ to $^\circ\text{F}$
 24. Convert $515 \text{ }^\circ\text{F}$ to $^\circ\text{C}$