Lab Procedure and Percent Error Homework

Find the percent error in each of the following problems. Use a separate sheet of paper.

1. The literature value of the atomic mass of an isotope of nickel is 57.9 g/mol. If a laboratory experimenter determined the mass to be 59.6 g/mol, what is the percent error?

2. The mass of one mole of oxygen gas is determined in an experiment to be 31.4 g/mol. Calculate the percent error, given that the literature value for this mass is 32.0 g/mol.

3. At 20° C, the solubility of potassium chloride is actually 34.7 grams per 100 cm^3 water. A laboratory experiment yielded 30.3 grams per 100 cm^3 water at the value. What is the percent error?

4. The solubility product constant for silver oxide at 25°C is actually 1.51×10^{-8}. An experimental value obtained in a lab was 1.47×10^{-8}. What is the percent error?

5. Working in the laboratory, a student find the density of a piece of pure aluminum to be 2.85 g/cm^3. The accepted value for the density of aluminum is 2.699 g/cm^3. What is the student's percent error?

6. A student experimentally determines the specific heat of water to be 4.29 J/g x C^o. He then looks up the specific heat of water on a reference table and finds that is 4.18 J/g x C^o. What is his percent error?

7. A student takes an object with an accepted mass of 200.00 grams and masses it on his own balance. He records the mass of the object as 196.5 g. What is his percent error?

1. Explain in your own words how to light a burner?

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2. What is the function of the "tare" button on the balance? When should it be used?

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3. Why don't we use beakers or Erlenmeyer flasks to measure exact volumes of liquids? What piece of glassware do we use to make accurate volume measurements?

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4. When measuring volumes with a graduated cylinder, do we measure from the top or bottom of the meniscus? When recording these volumes measured with a graduated cylinder, to what decimal place can we record our measurements?

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5. What do we use to remove dry chemical from a supply? _____

6. Why is it important to keep each pipet with the liquid supply bottle they are assigned to?

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7. Why are we not allowed to sit on the lab counters or floor during a lab?

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8. Should you get too much solid or liquid chemical from the supply table, what do you do with the excess? Why do you never return it to the supply bottle?

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9. Explain the procedure for pouring a liquid reagent from a stock bottle.

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