

Discussion: In this measuring, the granulated sugar error was systemic as one formed because of the types of instruments and ways they were measured. This error can be predictable as it shows different values same weight sugar, and different instructions this allows us to see exact values with the calculation of measurements. The mass of the 15 ml (about 0.51 oz) breaker and 25 ml (about 0.85 oz) graduated cylinder tends to vary every time you measure which means that it forms a random error as it cannot vary the weight every time you measure the same items. In this experiment, 15ml (about 0.51 oz) breaker is more precision than the graduated one as the standard deviation of the breaker is more around the mean but the 25 ml (about 0.85 oz) graduated cylinder is more spread which results in more spread out data which means that data is not very precision as it does not data relate to each other. Each glassware has several types of measuring which result in several types of values for the same number of substances and each one has different accuracy. A graduated cylinder is most accent in this experiment because it is Advantage of having lower percent error than the rest of the glassware, but it does it disadvantages as it can have higher rates of error for specific experiments and ways of using it. Vol. pipette also has higher accurately, but it is more precise than accurately for a dissolved solution, and it is the disadvantage that comes with measuring in vol pipette as it tends to measurements are more precise than acquired. Burette has the most advantage as it has higher accurate and precise values because it gives a high amount of control over the person's experiments but does not have the highest accuracy and precision but is closer to higher accuracy and person.

Conclusion: This experiment's purpose is to learn how to use the equipment to get to the most precise and accurate possible for future lab experiments. In the experiment, it was able to achieve through the process of measuring the same amount of distilled water in several types of glassware, such as the graduated cylinder, Vol. Pipette and Burette calculate the amount of percent error does each instrument and try to find the lowest percent error. In the experiment, the graduated cylinder was the instrument that had the lowest percentage error of other instruments because of the higher number of accessories it had in measurement. Most errors are acquired because of the amount of control over pouring the solution into the instrument as each one has a different level of control over the measurement. In the future to get the lowest percentage try to get more control over the handling of the solution during the measurement and use the equipment that has the highest accuracy and precision possible.