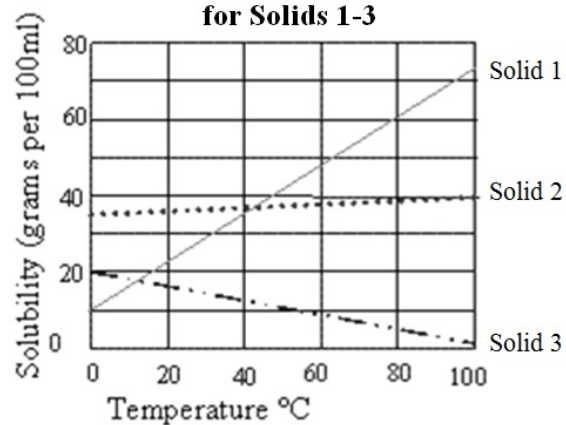


1. On a hot day, Shaylynn and Marcus decide to make sugary drinks. Shaylynn mixes 1 gram of Kool-Aid to 200 ml of water. Marcus mixes 3 grams of Kool-Aid to 200 ml of water. Whose Kool-Aid is more concentrated?
 - a. Shaylynn because...
 - b. Marcus because...**
2. The solubility of sugar in water at room temperature is 200g/100mL of water. If Maxine mixes 500g of sugar in 100ml of water, do you expect it all to dissolve?
 - a. Yes, it will because...
 - b. No, it won't because...**
3. You can describe a solution with a ratio of the amount of solute divided by the amount of solvent. For example, if 15 grams of a substance is dissolved in 100 milliliters of water, the ratio is 15g/100ml. Which response below best describes what this ratio represents?
 - a. The solubility of the substance
 - b. The concentration of the solution**
 - c. The soluble level of the substance
 - d. That 15g of the substance can dissolve in water
4. Many students get confused about the concentration of a solution and the solubility of a substance. Which statement below best describes the relationship between these two terms?
 - a. Concentration and solubility are different terms used to describe the same concept.
 - b. Solubility could be called the maximum concentration.**
 - c. Concentration means that "a substance can dissolve"; Solubility tells "how much material is dissolved in a solution".
 - d. Concentration depends on the liquid; solubility does not.
5. Jim is checking Eric's science notes. Jim reads this: "Solubility is the maximum amount of a substance, sugar for example, that can be dissolved in a solvent, such as water."
Jim says: "I am not sure that is entirely true; there is something else we need to think about."
Eric says: "How can that be? A maximum is a maximum; there can only be one value."
Who do you agree with?
 - a. Jim because...**
 - b. Eric because...
 - c. Neither because...
6. Rod is experimenting in the lab with an unknown white powder. He adds the powder to a test tube of water until even with stirring no more powder will dissolve and there is still excess powder at the bottom of the test tube. He wonders what will happen to the amount of dissolved powder if he heats the test tube and water.
Which of the following do you think he should expect?
 - a. More of the powder will dissolve.**
 - b. Nothing will happen to the amount of dissolved powder.
 - c. Some of the dissolved powder will come out of the solution and rest on the bottom.
 - d. Any of the above is possible.
7. After Billy and Sally got done with their Solid 1 solubility experiment, they did similar tests with some other solids. The results are shown in the graph.

Solubility vs. Temperature for Solids 1-3



Based on the results shown, which hypothesis below would be best to suggest in their lab report

- Increasing the temperature always has the same effect on solubility.
- Increasing the temperature always increases the solubility of a solid.
- Increasing the temperature always decreases the solubility of a solid.
- Increasing the temperature can change the solubility of a solid.**
- Increasing the temperature does not affect the solubility of a solid.