Concentration worksheet
Show all work and use the correct units

1. 65 g of sugar is dissolved in 750ml of water what is the concentration of the solution?

$C = \dfrac{m}{V}$ $\dfrac{65g}{750 mL}$ $= 0.086 g/mL$

2. Which is more concentrated 34 g of salt dissolved in 100 ml of water or 100 g of salt in 1500 ml of water?

$\dfrac{34g}{100} = 0.34 g/mL$ $\dfrac{100 g}{1500 mL} = 0.067 g/mL$

3. If the solubility of salt in water was determined to be .5 g/ml would a solution that had 50 g of salt in 150 ml of water be considered saturated? No

$\dfrac{50g}{150 mL}$ $0.33 g/mL < 5 g/mL$ ✓

4. The solubility of sodium nitrate in water is .8 g/ml at 0 degrees Celsius. The solubility increases to 1.9 g/ml at 180 degrees Celsius. Explain why this happens.

Temperature ↑ particles collisions and agitation as well as spaces between particles so more can dissolve!

5. If the concentration of a solution is determined to be .27 g/ml and it was dissolved in 200 ml of solvent how much solute was used to make it?

$0.27g = \dfrac{x}{200}$ $= 54g$

6. If the concentration of sugar in water is determined to be .45 g/ml and 100 g of sugar was used to make the solution how much water was used?

$C = \dfrac{m}{V}$ $.45 g/mL = \dfrac{100 s}{x}$ $= 222.2 mL$

7. Why does pop go flat at room temperature more easily than in the refrigerator?

warmer temperatures
changes distribution of
gas particles

CO_2 less soluble in warm liquids.

8. What is the difference between a mixture and a compound?

mixture: 2 or more substances that are chemically
different /not chemically joined.

compound: 2 or more elements chemically react
with each other to form chemical bonds
between atoms.

9. How are the 3 types of mixtures different?

10. Sand is insoluble in water. If you have 50g of sand how much water would you need to dissolve it?

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