WS 7.3.1 Solubility Curves ***(see graph on reference sheet)***

Based on the solubility below, decide whether each of the following is:

A: unsaturated, **B**: saturated, **C**: supersaturated, or whether **D**: not enough information is given

*** assume it's dissolved ***

1) 50 g KCl in 100 g of water at 90˚C. ____

2) 50 g KCl in 100 g of water at 60˚C. ____

3) 50 g KNO_3 in 100 g of water at 60˚C. ____

4) 50 g KNO_3 in 25 g of water at 60˚C. ____

5) 69 g KNO_3 in 50 g of water at 70˚C. ____

6) 25 g KNO_3 in 100 g of water. ____

7) 25 g NaCl in 100 g of water. ____

8) 40 g of KCl in 100 g of water at 20˚C. ____

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9) How many grams of KCl can dissolve in 100.0 g of water at 65˚C? _____

10) What temperature would be required to get 85 g of KNO_3 to dissolve in 100.0 g of water? ____

<u>SHOW ALL WORK FOR THE FOLLOWING</u>:

11) How many grams of $NaNO_3$ can be dissolved in 50.0 g of water at 50.0˚C? _____

12) What mass of $KClO_3$ can be dissolved in 200.0 g of water at 15.0˚C? _____

13) How much NH_3 can be dissolved in 14.3 g of water at 69.0˚C? _____

14) How many grams of water will it take to dissolve 28.0 g NH_4Cl at 60.0˚C? _____

15) How much water is needed to dissolve 46.6 g of SO_2 at 28˚C? _____

16) What temperature would be required to get 71.0 g of KCl to dissolve in 156 g of water? _____

WS 7.3.2 Solubility Curves ***(see graph on reference sheet)***

17) What is the percent $KClO_3$ in a solution that is saturated at 61˚C? _____

18) What temperature is required to make a 50.0% KNO_3 solution? _____

19) What temperature is required to make a 60.0% KNO_3 solution? _____

20) a. Explain why <u>FISH</u> do better in cold water:

b. Explain why <u>SODA</u> is best served cold:

c. Do gases behave the same as or different than solids when it comes to solubility & temperature? Take a look at your graph. SO_2, NH_3, and HCl are all gases. How do these solubilty curves differ from the others?

<u>Ans</u> (iro+5): A, A, A, B, B, C, C, C, D, 2.7, 16, 22, 46, 50, 51, 57, 58, 61, 73, 582
<u>Units</u> (iro+1): %, g, g, g, g, g, g, ˚C, ˚C, ˚C , ˚C, ˚C