**Liquids and Solids Applied Practice**

1. Why is a burn from steam typically more severe than a burn from boiling water? Explain using a phase change diagram.
2. Determine the strongest intermolecular force in the following compounds.

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| --- | --- |
| Kr | CS2 |
| H2S | CH4 |
| HI | CO |
| CO2 | NF3 |

1. Circle the molecule in each pair that will have a higher boiling point.
2. H2O or H2S
3. C2H6 or C2H5OH
4. P4 or As4
5.  Use the following Heating Curve. Identify the following from the graph. If the question asks for a part of the graph, use the letter associated with the appropriate line segment.

a. What is the boiling point?

 b. Where is the substance a solid?

 c. Where is the Heat of Fusion?

 d. What is the condensation point?

 e. Where is the substance a gas?

 f. What is the freezing point?

1. What would happen to the above graph if the intermolecular forces became stronger? Describe and sketch a before and after graph of what would happen. (Numbers don’t matter)
2. What quantity of energy does it take to convert 0.250 kg of ice at -15.0 $℃$ to steam at 300.0 $℃$? The specific heat capacities are: Ice, 2.03 J/g$℃$; Liquid, 4.18 J/g$℃$; steam 2.02 J/g$℃$;

Hvap = 40.7 kJ/mol; Hfus = 6.02 kJ/mol.

1. When mercury is measured in a graduated cylinder it forms a convex bubble instead of a concave bubble like water. What is causing the convex bubble instead of the concave bubble?
2. Based on the following diagram below answer the following questions. If a point does not exist answer not shown.



a. Where is the substance a gas?

 b. Where is the substance a solid?

 c. Where is the triple point?

 d. Where is the critical point?

 e. Where is the substance a liquid?

 f. Where is the equilibrium line?