



Use your reorganized table from question 4 to answer the following questions:

5) Which substance or substances are gases at room temperature (22 degrees Celsius)?

6) If a substance is a gas at 22 °C, what can you infer about the boiling point of that substance?

7) Which substance or substances boil between 22 °C (room temperature) and 37 °C (body temperature)?

8) Intermolecular forces are the "glue" that hold solids and liquids together. What can you infer about intermolecular forces among decane molecules compared to intermolecular forces among butane molecules? Explain.

9) In each pair, circle the substance with stronger intermolecular forces:

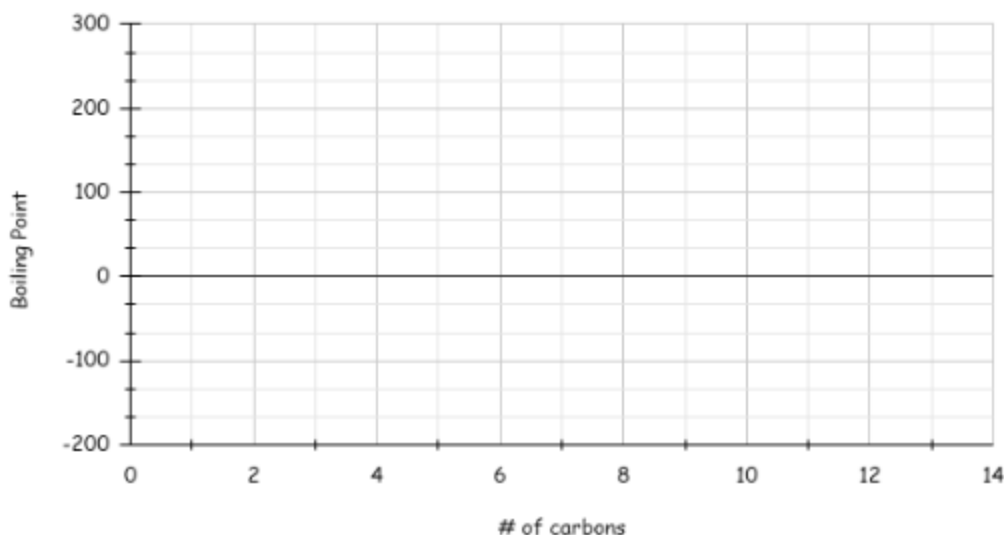
a. Heptane vs. Nonane

b. Ethane vs. Pentane

c. Hexane vs. Propane

10a) Plot the data points for the alkanes on the following graph:

### Boiling Point of Alkanes



b) After plotting the 10 points you have, estimate on the graph points 11, 12, 13 and 14. Draw them with X on the graph.

c) Make a short table below with the formulas for those points and their approximate boiling points.