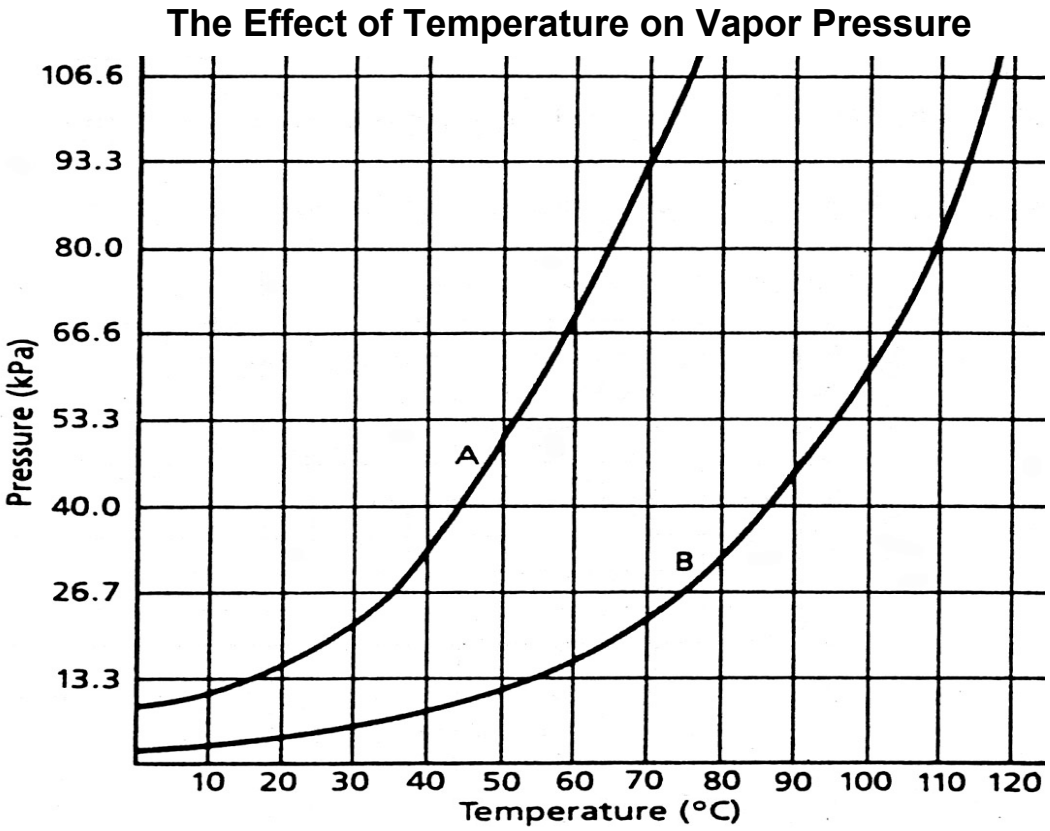
Unit 9 Gas Laws **Name** _____
Investigating Vapor Pressure **Block** _____

The vapor pressure of a gas above its own liquid depends on temperature. The boiling point, or temperature at which bubbles of vapor form within a liquid, depends upon both vapor pressure and atmospheric pressure. The following graph shows the vapor pressure curves for two substances A and B.



Use the graph above to answer the following questions:

1. What is the vapor pressure of A at 35°C? _____
2. What is the vapor pressure of B at 35°C? _____
3. At what temperature is the vapor pressure of liquid A 106.6 kPa? _____
4. What is the vapor pressure of B at this temperature? _____
5. At what temperature is the vapor pressure of B 106.6 kPa? _____
6. What is the "normal" boiling point of A? _____
7. What is the "normal" boiling point of B? _____
8. Which liquid has stronger intermolecular forces? ___ Explain? _____

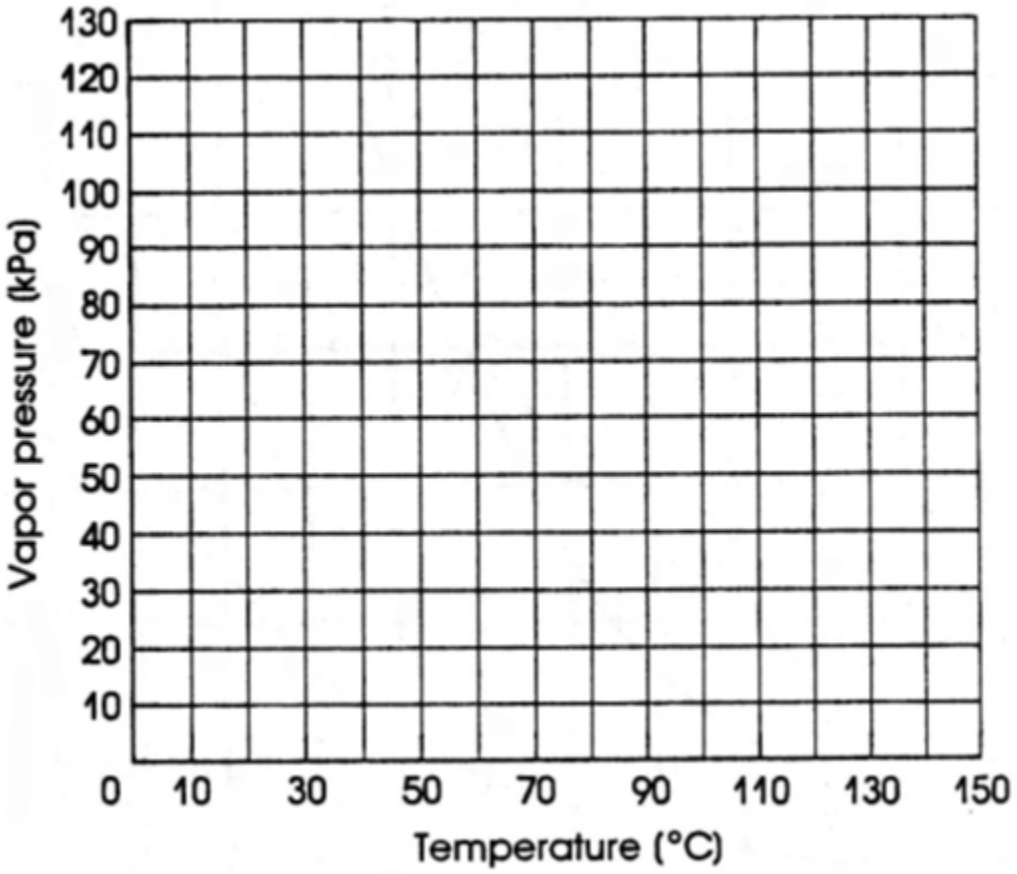
   _____

9. At what temperature would A boil in Denver, where atmospheric pressure is 93.3 kPa? _____
10. What would the atmospheric pressure have to be in order for B to boil at the same temperature, as you gave in your answer to #9? _____

The following table shows the vapor pressure of a certain liquid at various temperatures. Graph the data in the table provided.

Temp °C	Pressure (kPa)	Temp °C	Pressure (kPa)	Temp °C	Pressure (kPa)
10	2	60	22	110	68
20	4	70	29	120	80
30	7	80	37	130	93
40	11	90	46	140	107
50	16	100	56	150	122

The Effect of Temperature on Vapor Pressure



1. What effect does rising temperature have on vapor pressure? _____

2. Regardless of its temperature, a liquid will boil, when _____.

3. If atmospheric pressure was 96 kPa, what would the boiling point of the substance be? _____

4. What would happen to the boiling point, if the atmospheric pressure began to rise? Explain.

_____

_____

5. How would the cooking time of an egg, that is to be hard boiled, be affected by high altitude? Explain.

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