

Phase Change Graphing Exercise

Name KEY

Graph on **one** set of X and Y axes the following observed data: (Note: when no specific axis is indicated for a particular observation put "time" on the X axis)

Temperature (°C) Substance A	Temperature (°C) Substance B	Time (minutes)
5	5	0
10	10	1
15	15	2
17	20	3
19	25	4
21	25	5
23	25	6
25	25	7
30	30	8
35	35	9

One of the substances is a pure liquid; the other is a solution in which the liquid is the solvent.

A. At what temperature did substance "B" boil? 25 °C

B. At what temperature did substance "A" boil? Between 15 and 25 °C

C. Which substance ("A" or "B") is a pure liquid? B

D. Justify your choice in C. above.

Pure liquids have constant and characteristic boiling points, substance B boiled at 25 °C while substance A had a range of values.

E. What is the state of the substances in minutes 8 and 9? Explain.

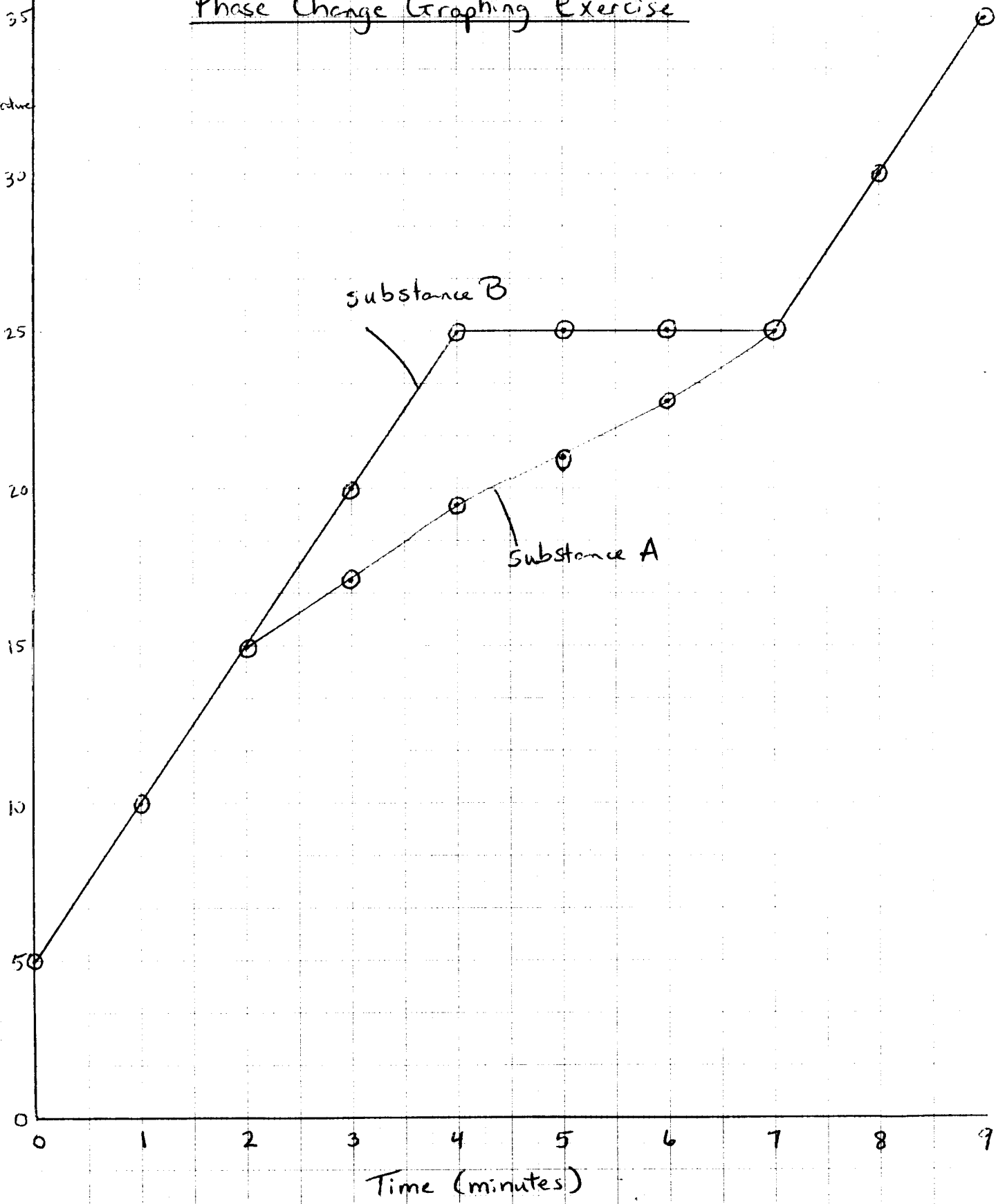
In minutes 8 and 9 the substances are in the gaseous state. The temperature began to rise again after the phase change.

F. Where were these substances stored before heating? In the fridge (below room temperature).

Phase Change Graphing Exercise

Temperature
(°C)

Science Kit
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substance B

Substance A

Time (minutes)