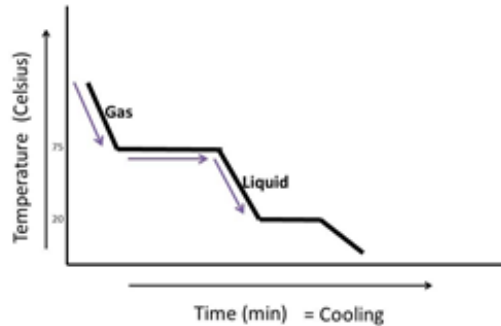


Part II: answer the following questions

8- Draw only the cooling curve for substance with phase change at 150 and 80 °C

Ans: in the figure the high transition temperature from gas to liquid is 150C and from liquid to solid is 80C



9- The heat capacity of object B is twice that of object A. Initially A is at 300K and B is at 450 K. They are placed in thermal contact and the combination is isolated. What is the final temperature of both objects.

Ans: the final temperature is 400K

10- Define all of the following : thermal conductivity , Blackbody radiation and Coefficient of linear thermal expansion

Ans:

1- Thermal conductivity: is $H = \frac{dQ}{dT} = -KA \frac{dT}{dX}$

The rate of heat flow by conduction per unit area per unit temperature gradient

2- Blackbody radiation: is

blackbody is one that absorbs all incoming light and emitted all wave length when heated and its emissivity =1

Coefficient of linear thermal expansion : is

The ratio between the frictional change in length: dL/L_0 to the change in temperature dT , thus

$$\alpha = 1/L_0 \cdot dL/dT$$