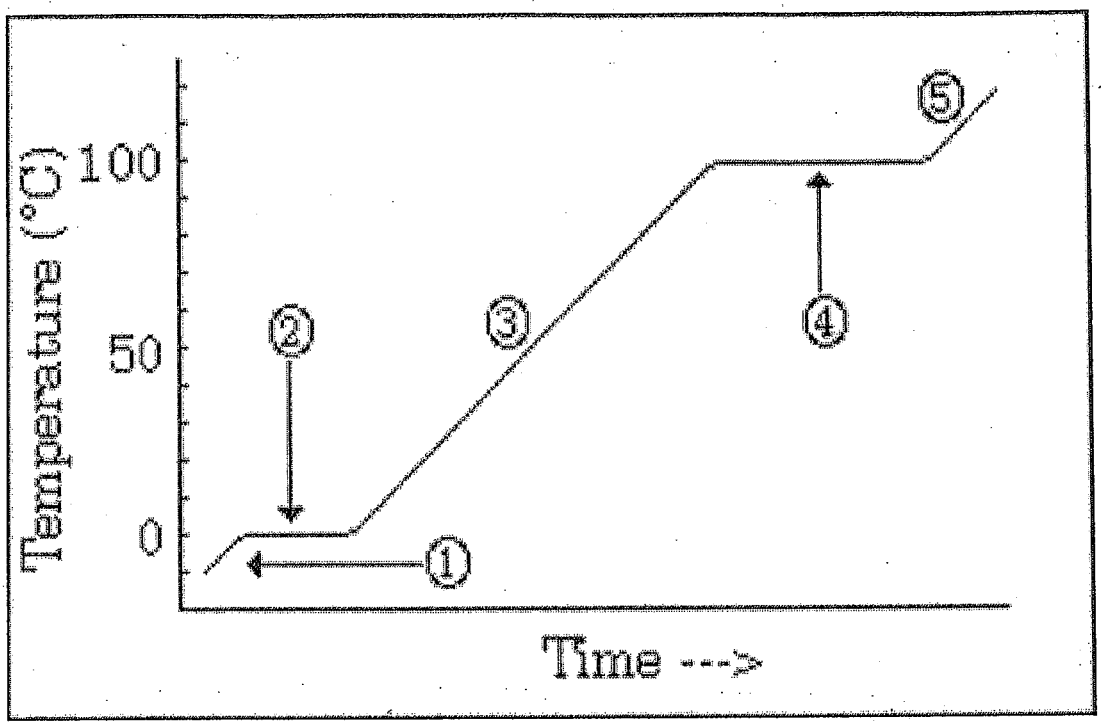
HEAT REVIEW (GRAPHS)



Examine the heating curve above to answer the following questions.

1) Which segment shows a temperature increase for the liquid? 3

2) Which segment shows a temperature increase for the solid? 1

3) Which segment shows the melting of the solid? 2

4) Which segment shows the liquid being transformed into a gas? 4

5) Which segments show a change in kinetic energy? 1, 3, 5

6) Which segments show a change in potential energy? 2, 4

7) What is the melting point of the substance? 0°C

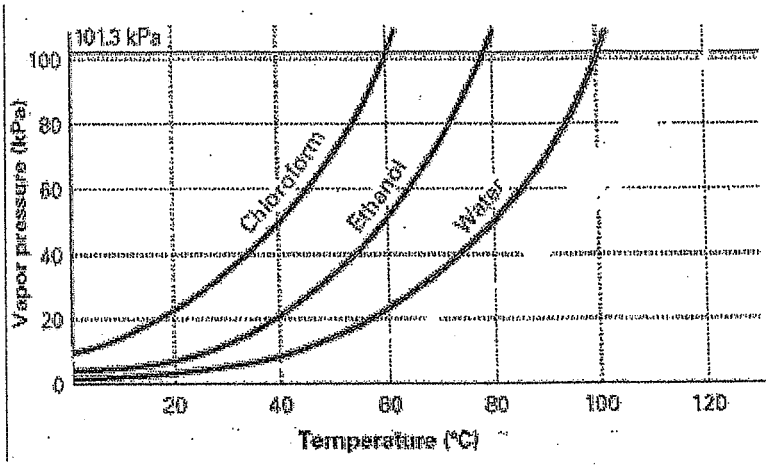
8) What is the boiling point of the substance? 100°C

9) Melting, boiling and sublimation are all examples of changes in State.

10) During a change of state, what happens? $\Delta T = 0°C$

11) As a sample of this solid is melting, what happens to the temperature of the sample?

REMAINS 0°C UNTIL THE WHOLE SAMPLE HAS MELTED



Examine the vapor pressure graph above and answer the following questions.

25) What is the normal boiling point of chloroform? 60°C

26) What is the normal boiling point of ethanol? 78°C

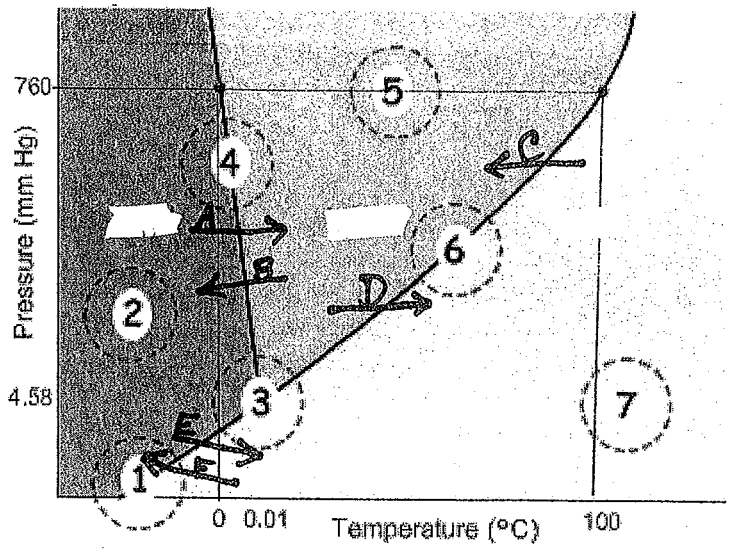
27) What is the boiling point of water at a pressure of 40 kPa? 75°C

28) What is the boiling point of chloroform at a pressure of 40 kPa? 35°C

29) Which of the three substances has stronger intermolecular forces holding it together? WATER

30) As pressure decreases what happens to the boiling point of any substance? DECREASES

31) When the vapor pressure of a liquid reaches atmospheric pressure, the liquid will BOILS



Examine the phase diagram above and answer the following questions.

12) In which region of the diagram is the substance a solid? 2

13) In which region of the diagram is the substance a liquid? 5

14) Which arrow shows boiling? D

15) Which arrow shows freezing? B

16) Which arrow shows sublimation? E

17) What is the normal melting point of this substance? 0°C

18) What is the normal boiling point of this substance? 100°

19) Would an increase in pressure cause this substance to melt or freeze? MELT

20) Is this substance more dense in the liquid or solid state? LIQUID

21) A solid sample of this substance is heated while the pressure is held constant at 2 mmHg. What would happen? SUBLIMES

22) A solid sample of this substance is heated while the pressure is held constant at 1.00 atm. What would happen? MELTS THEN BOILS

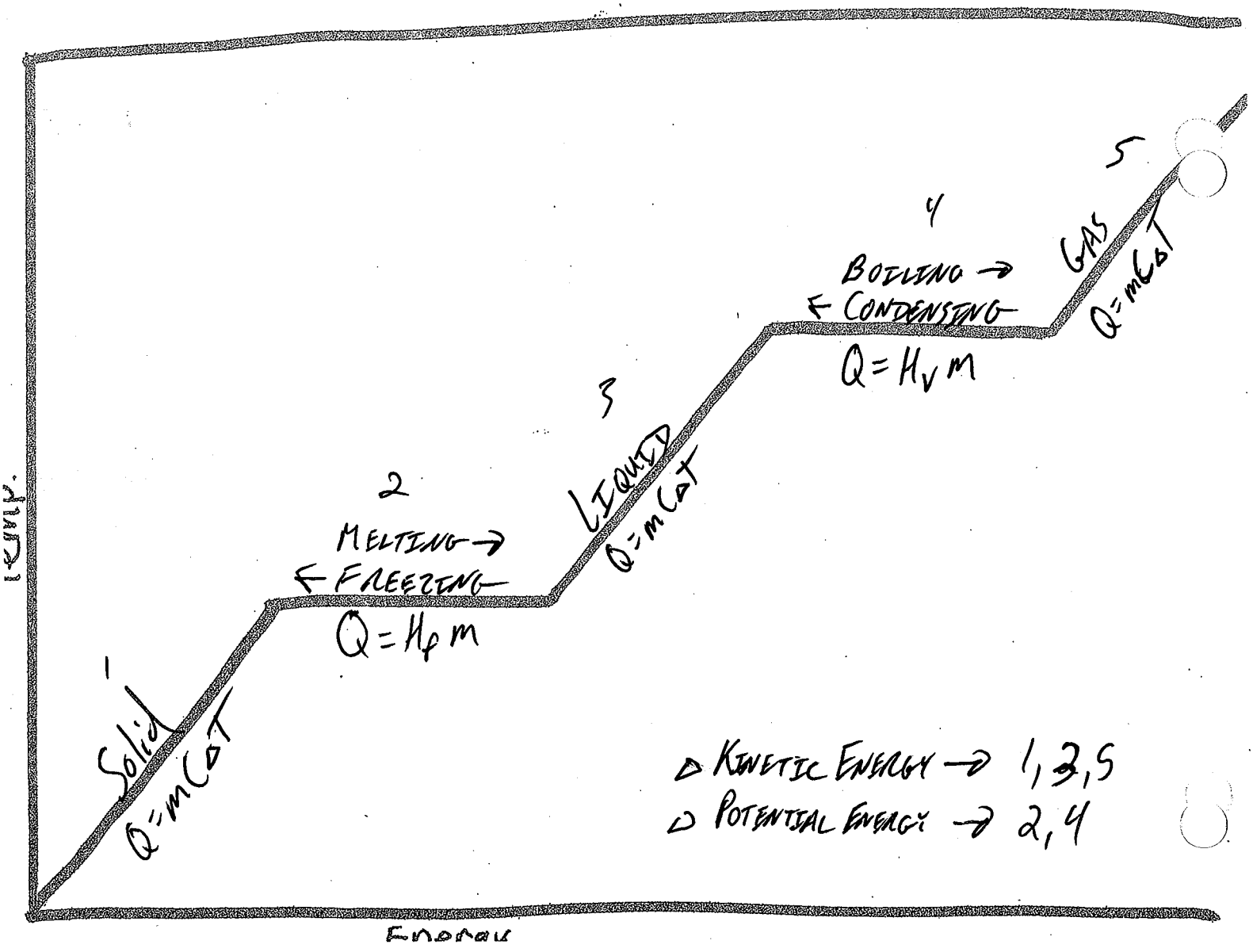
23) The special name given to point "3" is the TRIPLE POINT, where all 3 states exist in EQUILIBRIUM with each other.

24) If the temperature is above the critical temperature for any substance, then the substance will most definitely be in which of the three states?? (solid, liquid, or gas??)

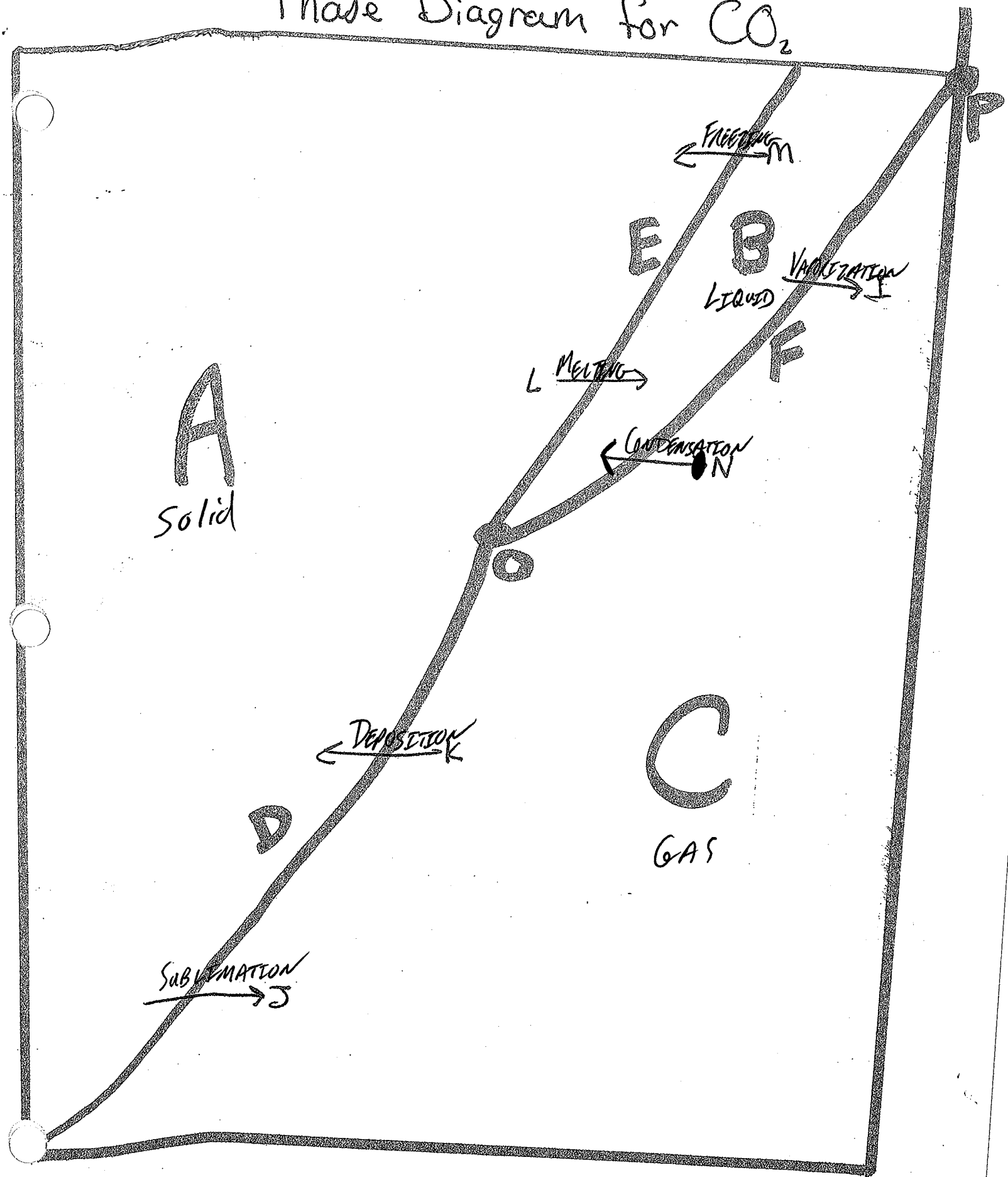
graph (include arrows if needed) for the following:

solid	boiling	$Q = mC\Delta T$
gas	Condensing	$Q = mH_f$
liquid	Potential Energy	$Q = mH_v$
freezing	Kinetic Energy	
melting		

(some terms may be used more than once)



Phase Diagram for CO_2



Use this phase diagram to answer the following Q's:

Phase Diagram Q's:

Identify the letter that corresponds to the appropriate term:

4. Vapor pressure curve for the liquid: F
5. Melting L
6. Boiling: I
7. Vapor pressure curve for the solid: D
8. Melting point curve: E
9. Triple point: O
10. Critical point: P
11. Deposition: K
12. Freezing: M
13. Solid: A
14. Condensing: N
15. Gas: C
16. Liquid: B
17. Sublimation: J