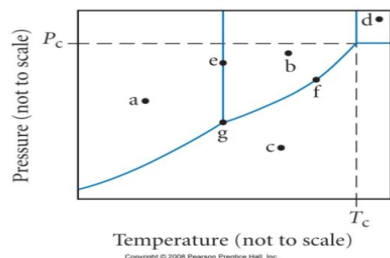


## WORKSHEET ON PHASE DIAGRAMS

1. Identify all of the phases present at points a through g on the diagram below.



2. Use the phase diagram below for iodine to answer the following questions.

- a. What is the normal boiling point?
- b. What is the melting point at 1 atm?
- c. What phase(s) is/are present at 25°C and 1 atm?
- d. What phase(s) is/are present at 186°C and 1 atm?

3. Nitrogen has a normal boiling point of 77.3K and a normal melting point of 63.1K. Its critical temperature is 126.2K and its critical pressure is 25500 torr. Its triple point is 63.1K and 94.0 torr. Sketch the phase diagram. Does nitrogen have a stable liquid at 1 atm?

4. Argon has a normal boiling point of 87.2K and a normal melting point of 84.1K. Its critical temperature is 150.8K and 48.3 atm. Its triple point is 83.7K and 0.68 atm. Sketch the phase diagram. Which phase has the greater density, solid or liquid?

5. The phase diagram for sulfur is shown below. Rhombic and monoclinic are two allotropic solid phases.

- a. Below what pressure will solid sulfur sublime?
- b. Which of the two solid phases is more dense?

