Name _____ Phases of Matter Worksheet #1

1. What is the difference between a compound and an element?

_____

_____

2. What is the relationship between mass and weight on Earth?

_____

_____

3. What is the relationship between mass and weight in space?

_____

_____

4. Choose a simple object from the classroom and provide and describe it in at least 5 details.

object _____

details _____ _____

_____ _____

_____ _____

_____ _____

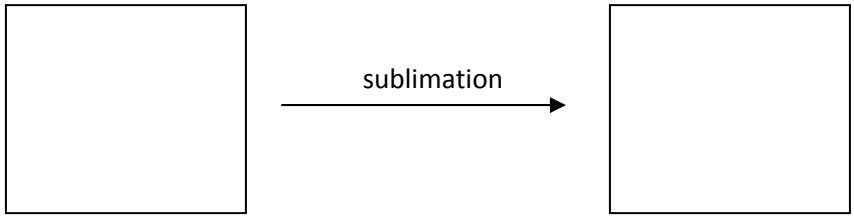
5. For the details listed above, circle the ones that are not dependent on amount (intensive properties).

6. Give two examples of homogeneous mixtures and two examples of heterogeneous mixtures.

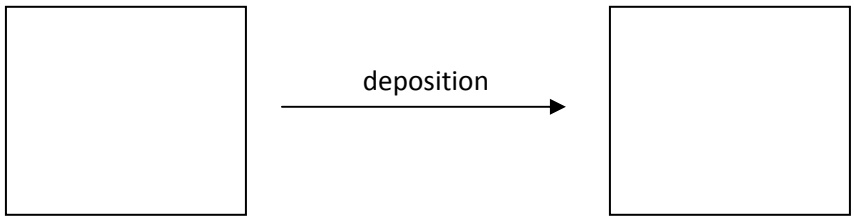
homogeneous _____ heterogeneous _____

_____ _____

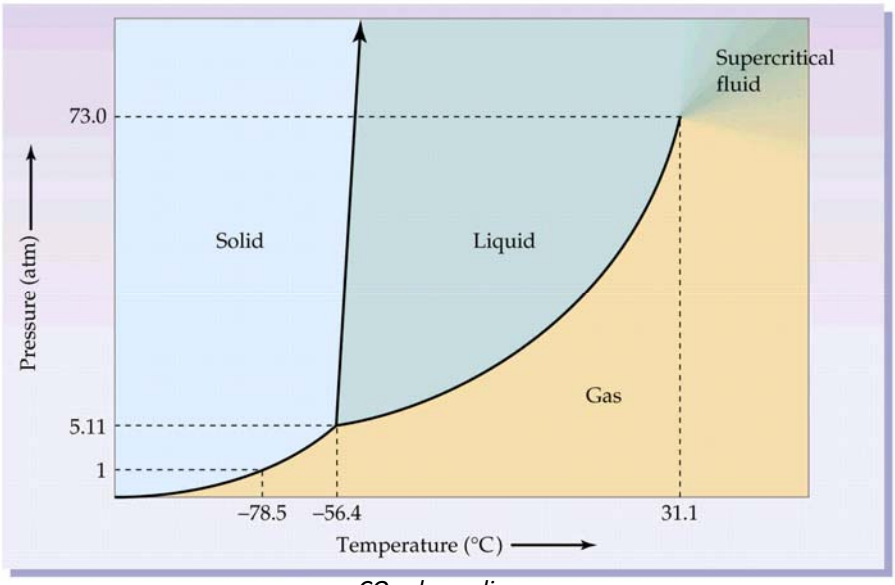
7. Fill in the following diagram to show a phase change from a solid to a gas for a sample of an **element**.



8. Fill in the following diagram to show a phase change from a gas to a solid for a sample of a **compound**.



Refer to the phase diagram for CO_2 (carbon dioxide) below to answer the following questions.



CO_2 phase diagram

9. Provide a temperature and pressure where CO_2 is:

a solid Temperature (°C) _____ Pressure (atm) _____

a liquid Temperature (°C) _____ Pressure (atm) _____

a gas Temperature (°C) _____ Pressure (atm) _____

10. At room temperature, 21 °C (70 °F), around what pressure is the lowest that liquid CO_2 will form?

Pressure = _____atm

Final thought: You may have noticed the region in the graph above that says "**Supercritical fluid**". This is a point where the pressure is so large that a liquid/gas-like condition exists. Supercritical fluids appear as liquids, but can behave like gases. Think about this for a bit, and then share what's on your mind.

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