

Write each of the changes listed below in the correct column in the table to show whether they are physical changes or chemical reactions.

Changes: boiling burning melting neutralising

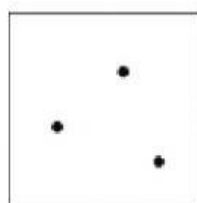
Physical changes	Chemical reactions

Some of the statements below are true and some are false.

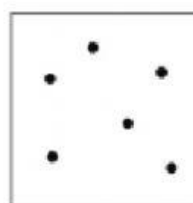
Put a tick (✓) in the box next to the statements that are true.

- ☐ New substances are made during a chemical reaction.
- ☐ New substances are made during a physical change.
- ☐ A chemical reaction is usually easier to reverse than a physical change.
- ☐ A physical change is usually easier to reverse than a chemical reaction.
- ☐ You cannot reverse physical changes or chemical reactions.

The boxes A and B show gas particles in containers.



A



B

Which box shows the gas at the higher pressure? _____

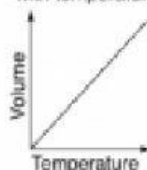
Explain your answer. _____

Decide whether the statements below are true or false. Put a tick (✓) in the correct box.

- a Gas pressure increases as the temperature increases.
☐ True ☐ False
- b Gas pressure increases as the volume of the container increases.
☐ True ☐ False
- c Gas pressure decreases as the number of gas particles decreases.
☐ True ☐ False

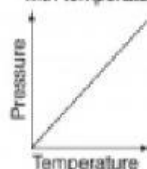
The pressure, volume and temperature of a gas are related to each other. The graphs below will help you to identify the relationships between these factors.

How volume changes with temperature



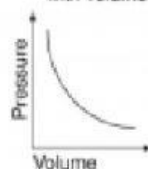
Graph A

How pressure changes with temperature



Graph B

How pressure changes with volume



Graph C

- 1 Graph A shows how the volume of a gas changes as the temperature is altered. The pressure of the gas is kept constant.
 - a Describe the trend shown on the graph.
 - b Which of the following statements is correct? Tick (✓) the box for the correct statement.

☐ The volume of a gas is directly proportional to the temperature.
☐ The volume of a gas is inversely proportional to the temperature.
- 2 Graph B shows how the pressure of a gas changes as the temperature is altered. The volume of the gas is kept constant.
 - a Describe the trend shown on the graph.
 - b Which of the following statements is correct? Tick (✓) the box for the correct statement.

☐ The pressure of a gas is directly proportional to the temperature.
☐ The pressure of a gas is inversely proportional to the temperature.
- 3 Graph C shows how the pressure of a gas changes as the volume is altered. The temperature of the gas is kept constant.
 - a Describe the trend shown on the graph.
 - b Which of the following statements is correct? Tick (✓) the box for the correct statement.

☐ The pressure of a gas is directly proportional to the volume.
☐ The pressure of a gas is inversely proportional to the volume.