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

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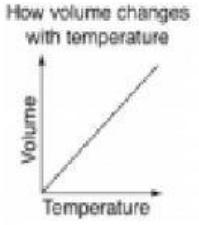
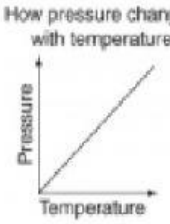
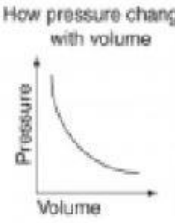
The pressure, volume and temperature of a gas are related to each other. The graphs below will help you to identify the relationships between these factors.



Graph **A**



Graph **B**



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.

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