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.

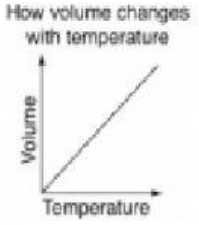
☐ True ☐ False

**c** Gas pressure decreases as the number of gas particles decreases.

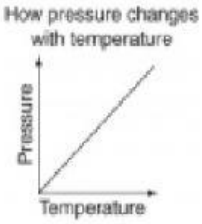
☐ True ☐ False

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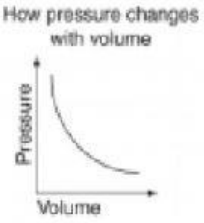
The pressure, volume and temperature of a gas are related to each other. The graphs below will help you to identify the relationships between these factors.




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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