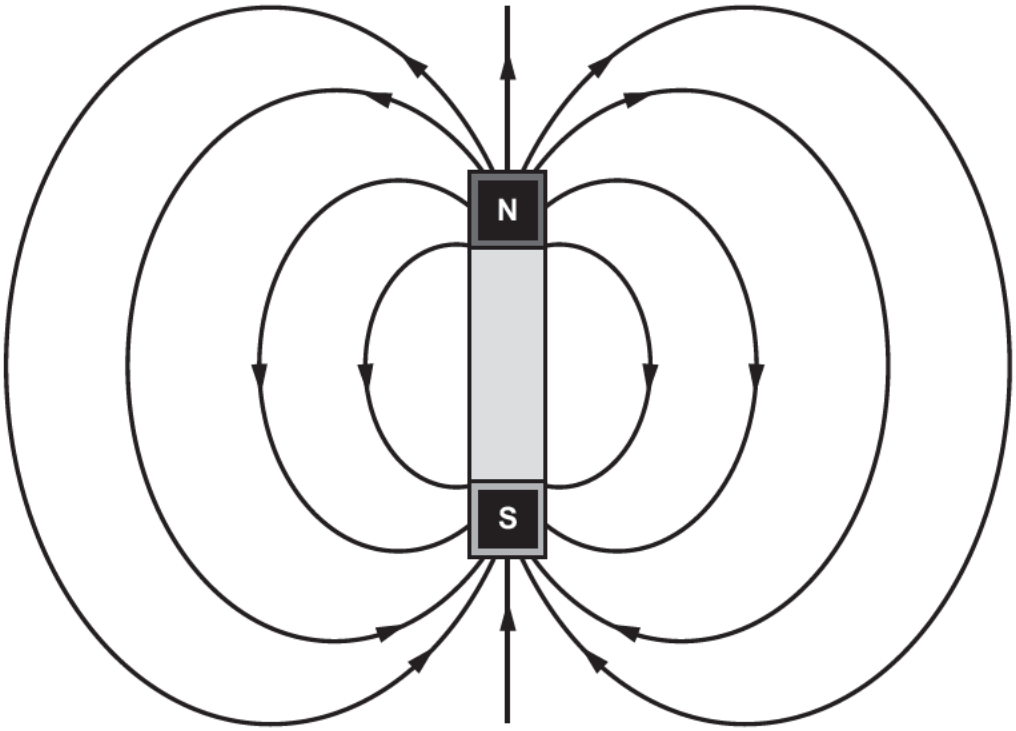
Magnetism and Electromagnetic – Checkpoint Sec 1 Physics

1. No.11

Rajiv draws the magnetic field pattern for a **weak** bar magnet.



(a) Write down the names of the parts labelled **N** and **S**.

..... and ..... [1]

(b) Which sentences about the magnetic field pattern for a **weak** bar magnet are correct?

Tick (✓) the **three** correct sentences.

Each field line has at least one arrow. ☐

Each field line is continuous. ☐

The field lines are all the same length. ☐

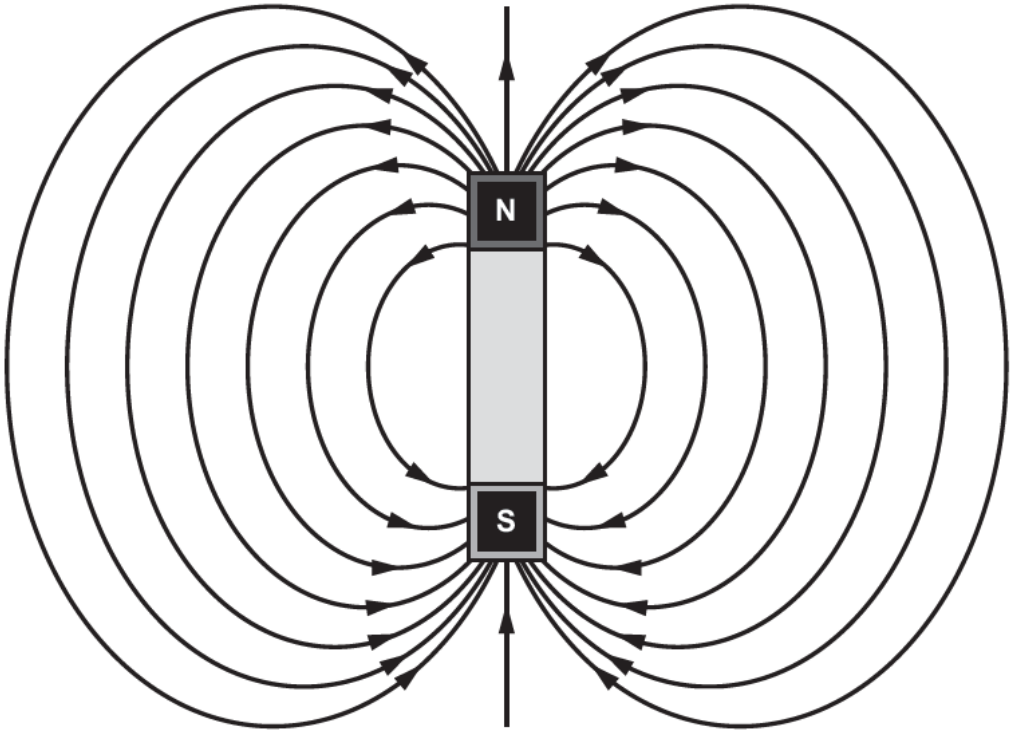
The field lines come out of **N** and go into **S**. ☐

The field lines cross over each other. ☐

[2]

(c) Rajiv has a **strong** bar magnet.

Look at the magnetic field pattern for his strong bar magnet.



Describe **one** way the magnetic field pattern for the strong bar magnet is **different** from the pattern for the weak bar magnet.

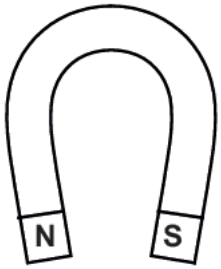
.....

..... [1]

2. No.5

Priya has two magnets.

bar magnet



horseshoe magnet

(a) Priya dips the bar magnet into iron filings.

Where will most of the iron filings stick to the magnet?

.....

Explain your answer.

.....

.....

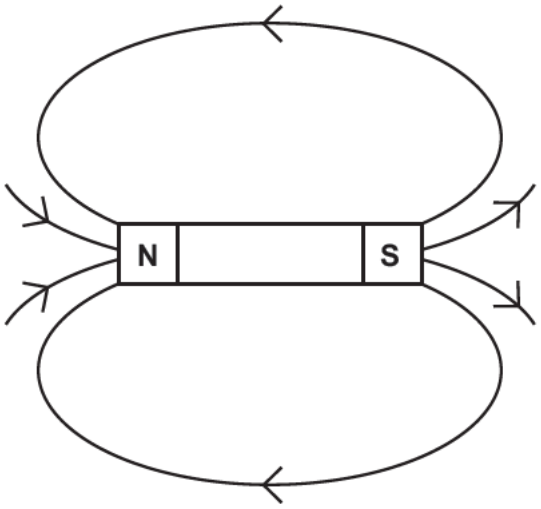
[2]

(b) Look at the horseshoe magnet.

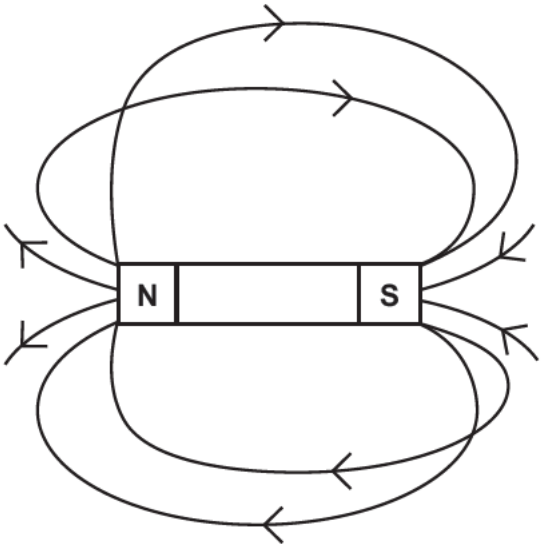
Put an **X** on the diagram to show where the **magnetic field** is **strongest**.

[1]

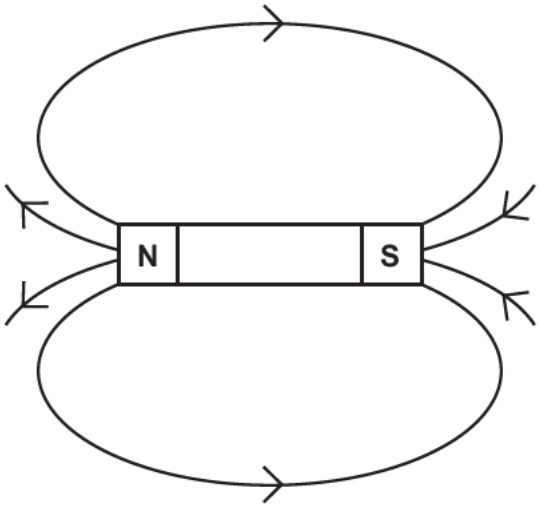
(c) Which pattern shows the magnetic field lines of a bar magnet?



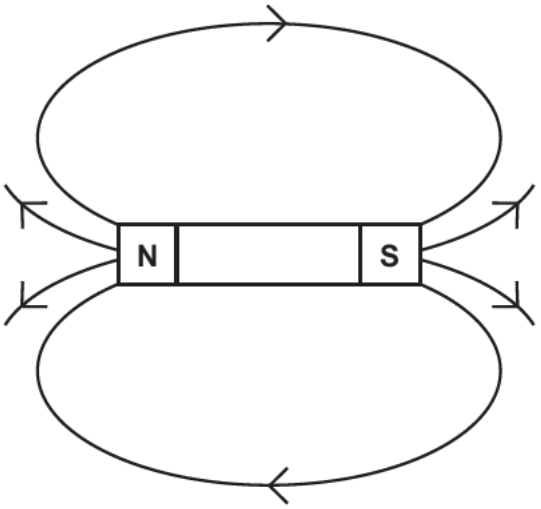
A



B



C



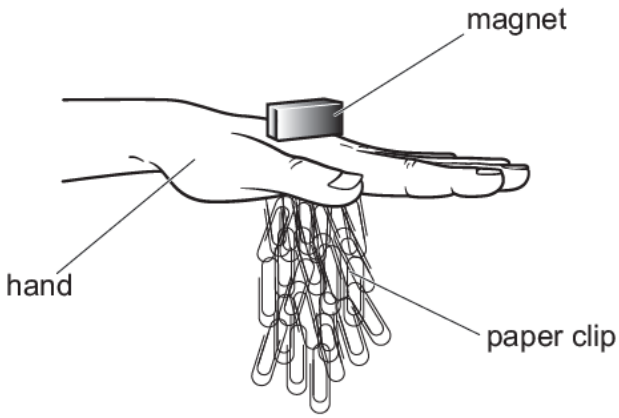
D

Choose from **A**, **B**, **C** or **D**.

answer ..... [1]

3. No.9

Mike investigates the strength of magnets.



Mike

- puts the magnet on top of his hand
- puts the bottom of his hand onto 24 paper clips
- lifts his hand up
- counts how many paper clips have been attracted
- repeats with different magnets.

Here are his results.

magnet	number of paper clips
A	24
B	24
C	7
D	19
E	12

(a) Mike concludes that magnet **A** and magnet **B** are both strong.

He **cannot** conclude which of these two magnets is stronger.

(i) Explain why he **cannot** conclude which magnet, **A** or **B**, is stronger.

.....

..... [1]

(ii) Describe what he could do to find out which magnet, **A** or **B**, is stronger.

.....

..... [1]

(b) Pierre repeats Mike's investigation.

Here are Pierre's results.

magnet	number of paper clips
A	18
B	22
C	1
D	13
E	6

Pierre uses the same magnets as Mike.

Pierre uses the same paper clips as Mike.

The results are different.

(i) Describe **one** difference between the results.

.....

..... [1]

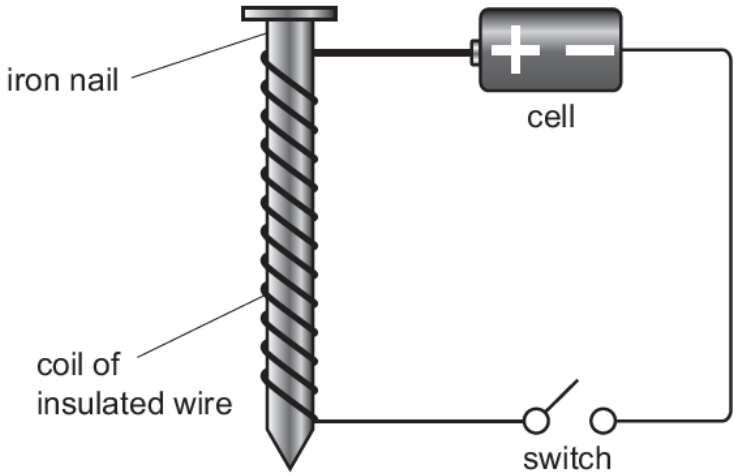
(ii) Suggest why the results are different.

.....

..... [1]

4. No.9

Pierre makes an electromagnet.



Pierre wants to make a **stronger** electromagnet.

What does he do?

Circle the **two** correct answers.

add another cell

add another switch

add more coils to the insulated wire

change the iron nail to a wooden pencil

remove the iron nail

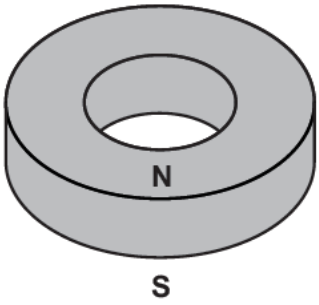
remove the switch

turn the cell around

[2]

5. No.3

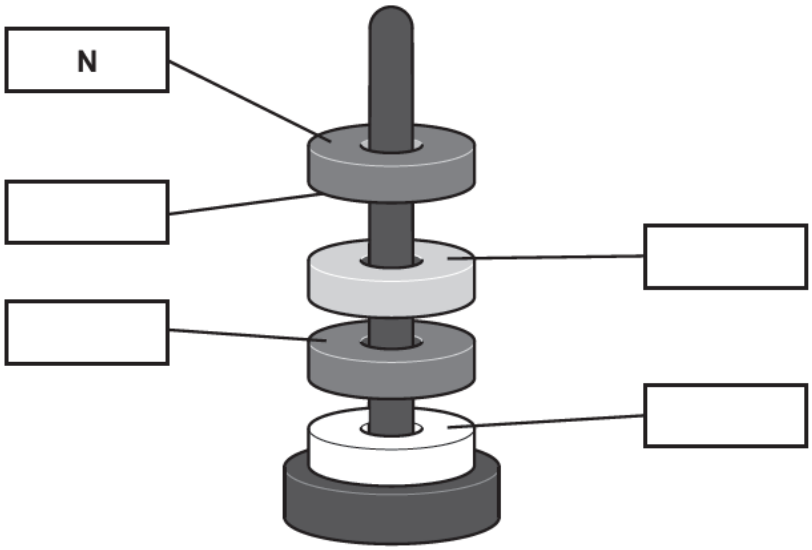
Ring magnets have a north pole (N) and a south pole (S).



Gabriella has a toy made of ring magnets.

She puts four ring magnets on the toy.

There are gaps between the magnets.



Complete the missing labels in the boxes on the diagram.

Use **N** for a north pole.

Use **S** for a south pole.

The first one has been done for you. [2]

6. No.14

Tick (✓) the **three** correct properties of magnets.

Like poles of magnets repel.	☐
Magnets always have N and S written on them.	☐
Magnets do **not** work if they are in water.	☐
Magnets attract iron, cobalt and nickel.	☐
The force of attraction is greater at the poles than in the middle of the magnet.	☐

[2]

7. No.1

Complete the sentence.

Choose from the list.

both the south pole and the north pole

neither pole

only the north pole

only the south pole

An iron nail is attracted to ..... of a magnet. [1]