

**Reflection and Self-Assessment****Completion:** Circle the statement that best describes the completion of this practice.

- I completed every question on the practice.
- I did not complete some questions on the practice because:  
\_\_\_\_\_

**Answer Checking:** Circle the statement that best describes how you checked your answers

- I checked all my answers against the key at the back and corrected any that were incorrect.
- I did not check all my answers and correct any mistakes because:  
\_\_\_\_\_

**Online Worked Solution:** Circle the statement that best describes how you used the online worked solutions.

- I did not use the online worked solution at all.
- I used the online solution to understand some questions I got incorrect.
- I used the online solution to help me learn how to answer some questions.

**Confidence:** Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

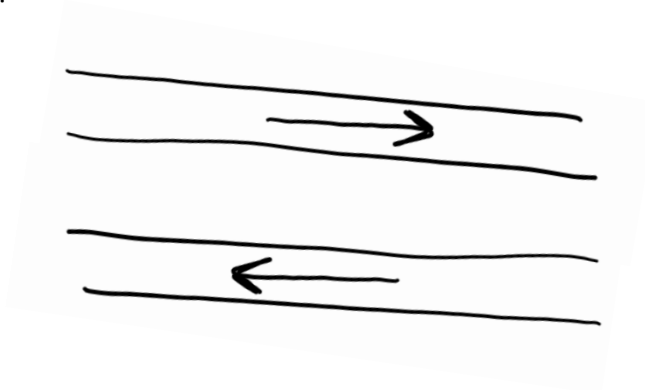
**Time:** Circle the statement below that best describes the total amount of time you spent actively working on this practice:

Less than an hour	Between one and two hours	Between two and three hours	Between three and four hours	More than four hours
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1. Two parallel wires have current moving as shown, will the wires push each other apart or pull together?



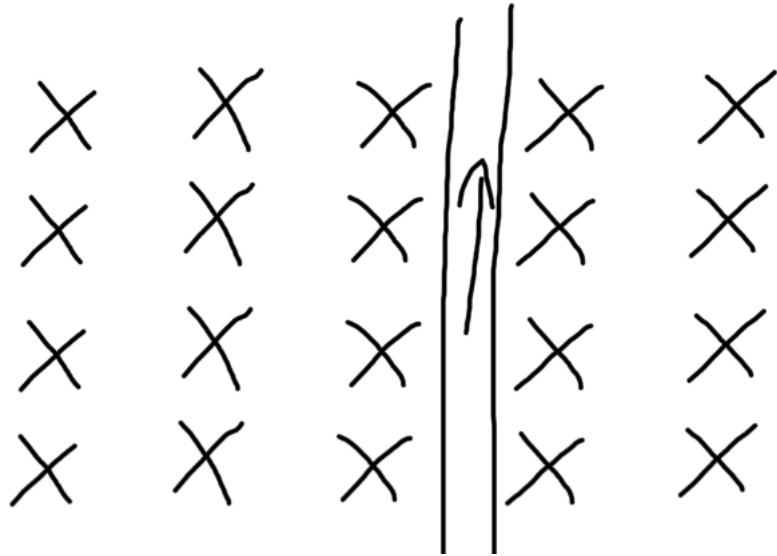
2. Two wires have current moving as shown, will the wires push each other apart or pull each other together?



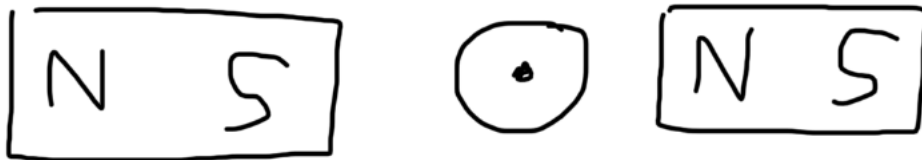
3. Two wires have current moving as shown, will the wires push each other apart or pull each other together?



4. Which direction will the wire shown be pushed due to the magnetic field pushing into the page?



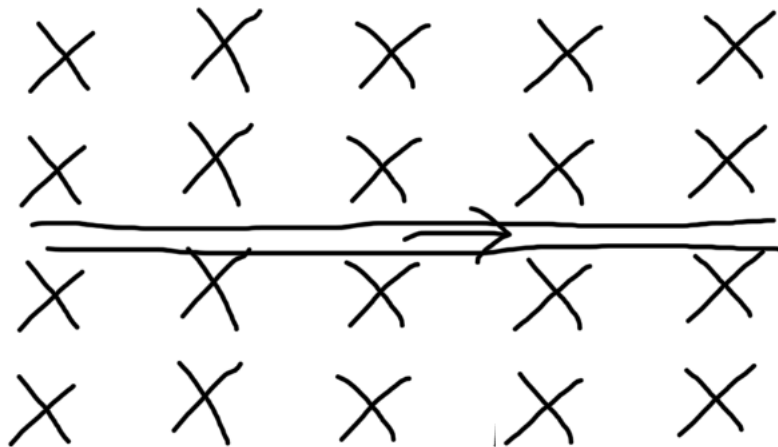
5. Which direction will the wire be pushed by the magnetic field created by the two permanent magnets shown.



6. Determine the direction the wire shown will be pushed due to the magnetic field between the two permanent magnets shown.

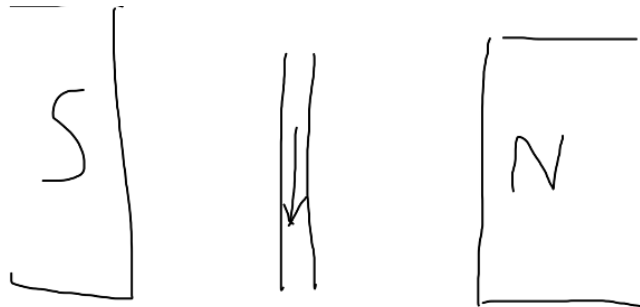


7. Determine the direction the wire shown will be pushed due the magnetic field pushing into the page?

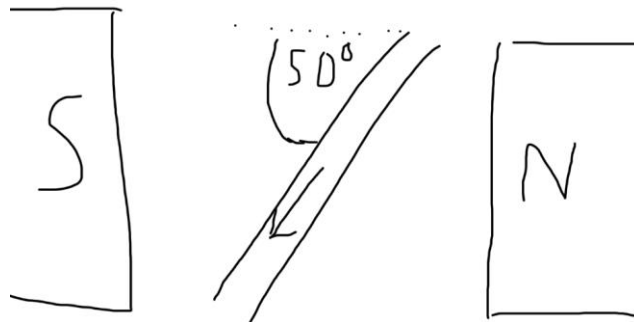


8. A current carrying wire is placed between two permanent magnets and rotated. Determine the magnitude of the magnetic force acting on the wire at each position if the strength of the magnetic field is 0.0125 T, 0.12 metres of wire is in the magnetic field, and 2.0 A of current is flowing.

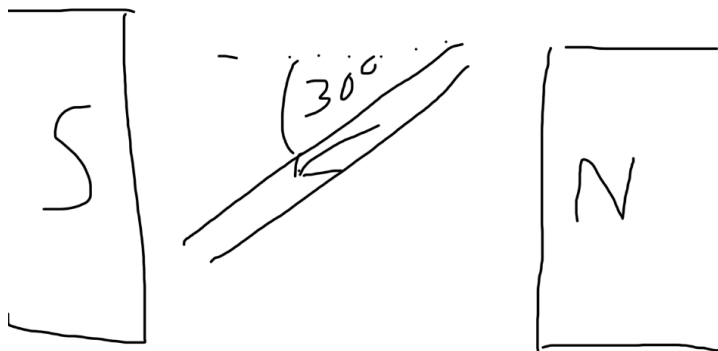
a.



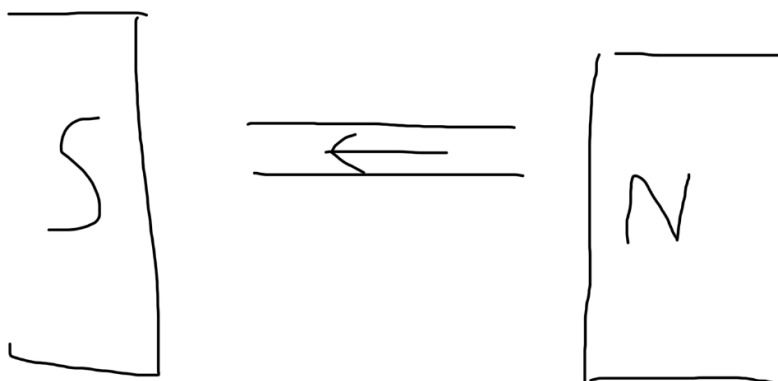
b.



c.



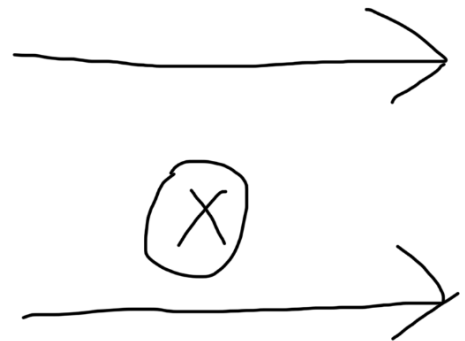
d.



e. In all of the above questions which direction was the magnetic force pushing the wire?

9. 0.89 metres of wire with 2.4 A of current flowing through it is perpendicular to a 0.0056 T magnetic field. What is the magnitude of the magnetic force acting on the wire?

10. The wire shown below has 4.2 A of current flowing through it and the magnetic field going from left to right is of strength 0.0912 T. 1.4 metres of wire is exposed to the magnetic field.



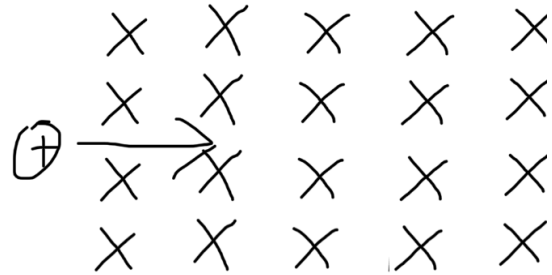
- a. What direction is the force acting on the wire?
- b. What is the magnitude of the force acting on the wire?

Magnetic Force Practice

Name: \_\_\_\_\_

11. A positively charged object is moving from left to right across a magnetic field directed into the page.

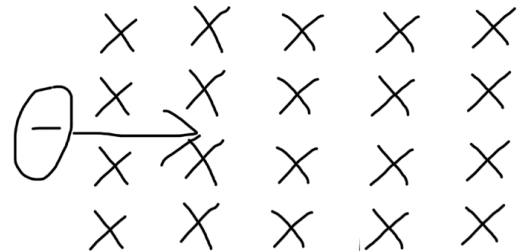
a. Which direction will it be deflected?



b. If the charge is  $23\mu\text{C}$  and it is moving at  $560\text{ m/s}$ , and the magnetic field strength is  $0.23\text{T}$  what will be the force acting on the charge?

12. A negatively charged object is moving from left to right across a magnetic field directed into the page.

a. Which direction will it be deflected?



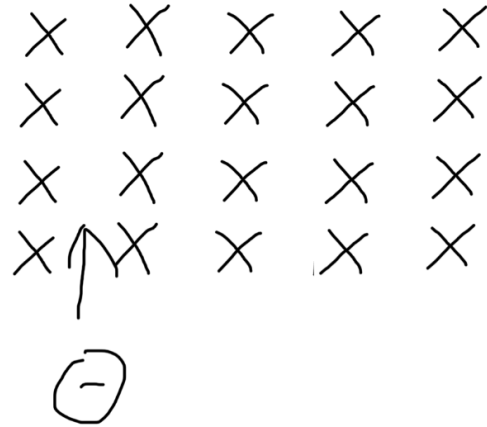
b. If the charge is  $-4.2\mu\text{C}$  and it is moving at  $4.25 \times 10^7\text{ m/s}$ , and the magnetic field strength is  $0.63\text{T}$  what will be the force acting on the charge?



Magnetic Force Practice

Name: \_\_\_\_\_

13. A negatively charged particle is initially moving relatively slowly to the North in a magnetic field directed into the page as shown.



a. Which direction will the magnetic force push the particle?

b. Once the particle accelerates in the direction from a) that direction quickly becomes the most important velocity, what direction will the particle be pushed now?

c. As a result of the push in b the object has started moving in a new direction, what direction will the magnetic force push the particle now?

d. Will a particle allowed to move freely in a magnetic field like this move in a circular path?

<b>Answer Key</b>				
1) Pull together	2) Push apart	3) Push apart	4) To the left	5) Down the page
6) Into the page	7) Up the page	8a) 0.0030 N	8b) 0.0023 N	8c) 0.0015 N
8d) 0 N	e) Into the page	9) 0.012 N	10a) Down the page	10b) 0.54 N
11a) Up the page	11b) 0.0030 N	12) Down the page	13) 110 N	13a) East
13b) South	13c) West	13d) It will move in circular path as the direction is constantly changing		