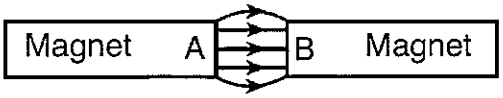
Magnetic field lines follow what a north end of compass would do. Away from North to South

Skill 46-Magnetism

209. The diagram below shows the magnetic field lines between two magnetic poles, *A* and *B*.

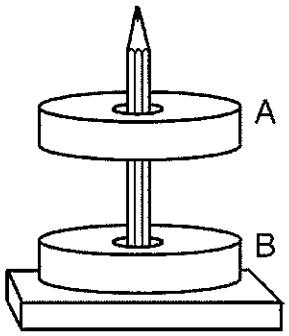


Which statement describes the polarity of magnetic poles *A* and *B*?

(A) *A* is a north pole and *B* is a south pole.
B) *A* is a south pole and *B* is a north pole.
C) Both *A* and *B* are north poles.
D) Both *A* and *B* are south poles.

Away from North to South

210. When two ring magnets are placed on a pencil, magnet *A* remains suspended above magnet *B*, as shown below.



Which statement describes the gravitational force and the magnetic force acting on magnet *A* due to magnet *B*?

(A) The gravitational force is attractive and the magnetic force is repulsive.
B) The gravitational force is repulsive and the magnetic force is attractive.
C) Both the gravitational force and the magnetic force are attractive.
D) Both the gravitational force and the magnetic force are repulsive.

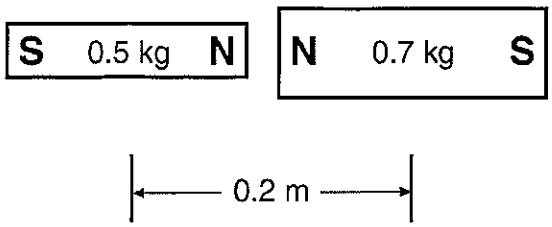
gravity is always attractive

magnetism & electricity follow a common pattern

opposite fields repel

Skill 46-Magnetism

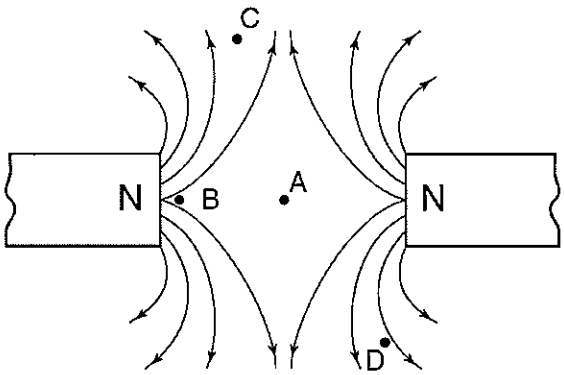
211. The diagram below represents a 0.5-kilogram bar magnet and a 0.7-kilogram bar magnet with a distance of 0.2 meter between their centers.



Which statement best describes the forces between the bar magnets?

A) Gravitational force and magnetic force are both repulsive.
B) Gravitational force is repulsive and magnetic force is attractive.
C) Gravitational force is attractive and magnetic force is repulsive.
D) Gravitational force and magnetic force are both attractive.

212. The diagram below shows the lines of magnetic force between two north magnetic poles.

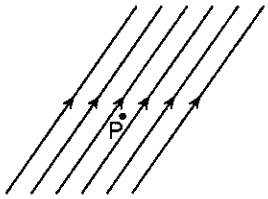


At which point is the magnetic field strength greatest?

A) *A* B) *B* C) *C* D) *D*

Closest field lines

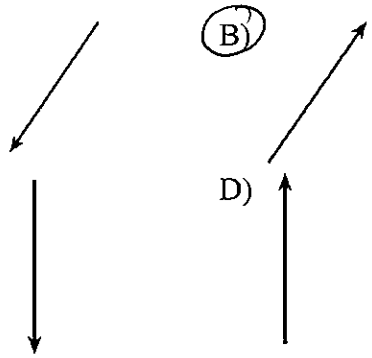
213. The diagram below represents the magnetic field near point *P*.



Follows field lines

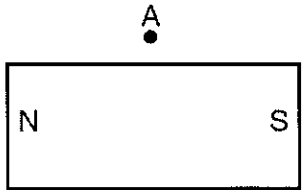
If a compass is placed at point *P* in the same plane as the magnetic field, which arrow represents the direction the north end of the compass needle will point?

A) B)



C) D)

214. The diagram below shows a bar magnet.



Which arrow best represents the direction of the needle of a compass placed at point *A*?

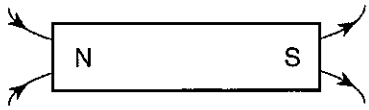
A) ↑ B) ↓ C) → D) ←

Away from North toward South

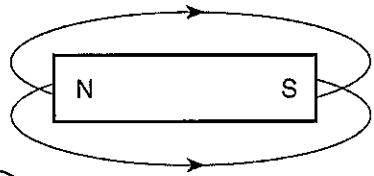
215. Which diagram best represents magnetic flux lines around a bar magnet?

A)

B)

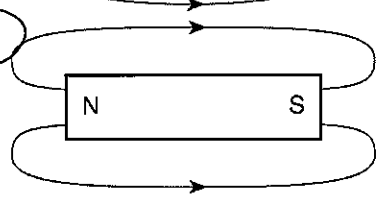


C)



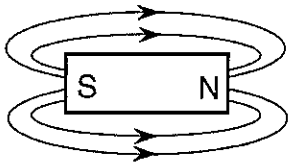
Field lines can't cross

D)

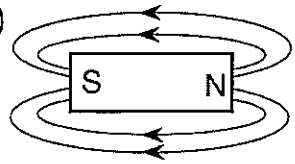


216. Which diagram below best represents the magnetic field near a bar magnet?

A)

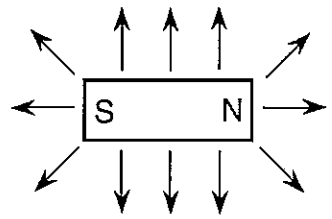


B)

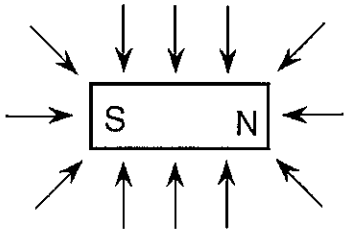


away from north toward south

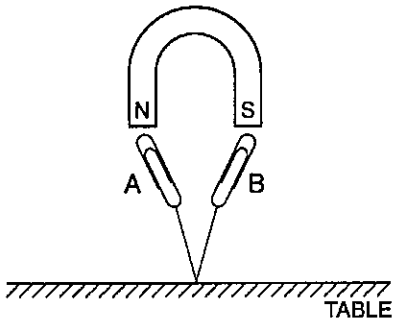
C)



D)

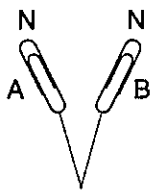


217. In the diagram below, steel paper clips *A* and *B* are attached to a string, which is attached to a table. The clips remain suspended beneath a magnet.

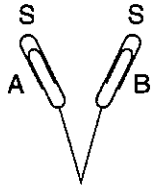


Which diagram best represents the induced polarity of the paper clips?

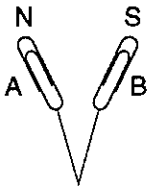
A)



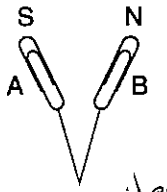
B)



C)



D)



opposites attract

218. Magnetic fields are produced by particles that are

A) moving and charged
B) moving and neutral
C) stationary and charged
D) stationary and neutral

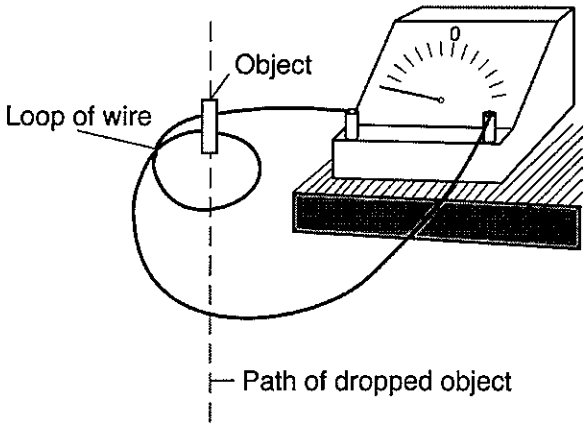
219. Which type of field is present near a moving electric charge?

A) an electric field, only
B) a magnetic field, only
C) both an electric field and a magnetic field
D) neither an electric field nor a magnetic field

220. Which particle would produce a magnetic field?

A) a neutral particle moving in a straight line
B) a neutral particle moving in a circle
C) a stationary charged particle
D) a moving charged particle

221. A small object is dropped through a loop of wire connected to a sensitive ammeter on the edge of a table, as shown in the diagram below.



A reading on the ammeter is most likely produced when the object falling through the loop of wire is a

A) flashlight battery
B) bar magnet
C) brass mass
D) plastic ruler

222. In order to produce a magnetic field, an electric charge must be

A) stationary
B) moving
C) positive
D) negative

223. An electron moving at a constant speed produces

A) an electric field only
B) a magnetic field only
C) both a magnetic field and an electric field
D) neither an electric field or a magnetic field