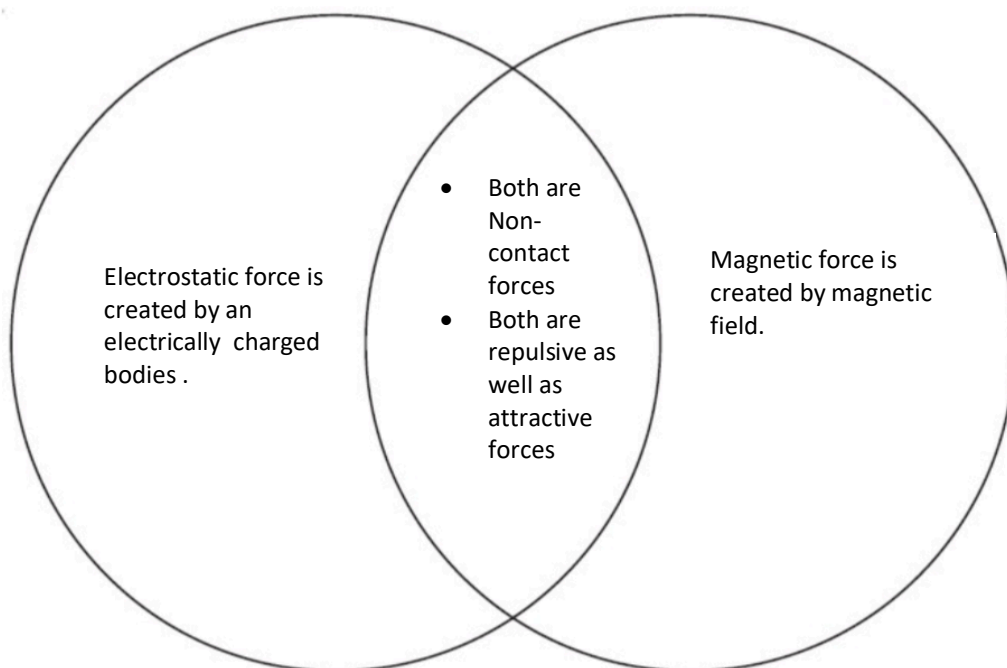FORCE AND PRESSURE

1. Define pressure.

Ans: The force acting per unit surface area is called pressure. SI unit of pressure is measured in N/ m^2, which is equal to 1 Pascal (Pa)

2. State the difference and similarity between electrostatic and magnetic force.

Ans:

Electrostatic force is created by an electrically charged bodies .

- Both are Non-contact forces
- Both are repulsive as well as attractive forces

Magnetic force is created by magnetic field.

3. We know that the atmospheric pressure acts on us but we don't experience its effect. Give reason.

Ans: This is because the cells in our body contain fluid which exert an equal but opposite pressure from within.

4. A truck weighs 4,000 N is parked in an area of 100 cm². How much pressure would be exerted on the ground?

Ans: Given;

The weight of the truck = 4000 N

Area = 100 cm²

= 100/ 10,000

= 0.01 m²

Pressure is given by:

Pressure (P) = F/A

= 4,000 N/ 0.01 m²

= 4,00,000 N/m²

5. A boy stands on the ground. The area below his feet is 80 cm². The pressure he exerts on the ground is 8 N/cm². Calculate the total force acting on the ground.

Given:

Pressure = 8 N/cm² Area=80 cm²

Pressure P= F/A

= 8 N/cm² x 80 cm² Force

= 640 N

6. Give three examples where friction is helpful to us.**(HW)**

7. In a game of tug of war, three girls of team A pull the rope with the force of 100N, 120N and 170N. In team B, the three members pull the rope with forces of 130N, 150N and 155N. What is the resultant force? Who will win the tug of war? (**HW**)

8. What are the effects of force? Support with relevant picture or drawing. **(HW)**