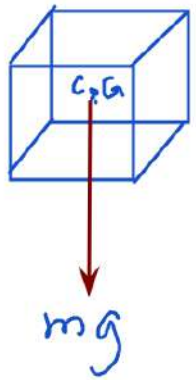
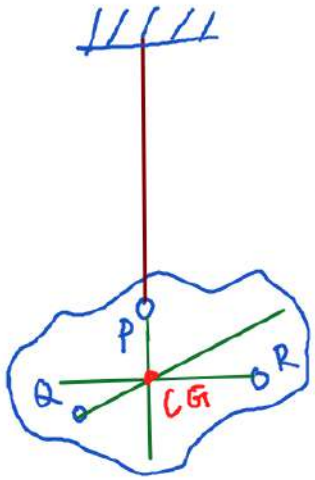
Centre of gravity : It is the point on an object, through which the weight of the object acts.



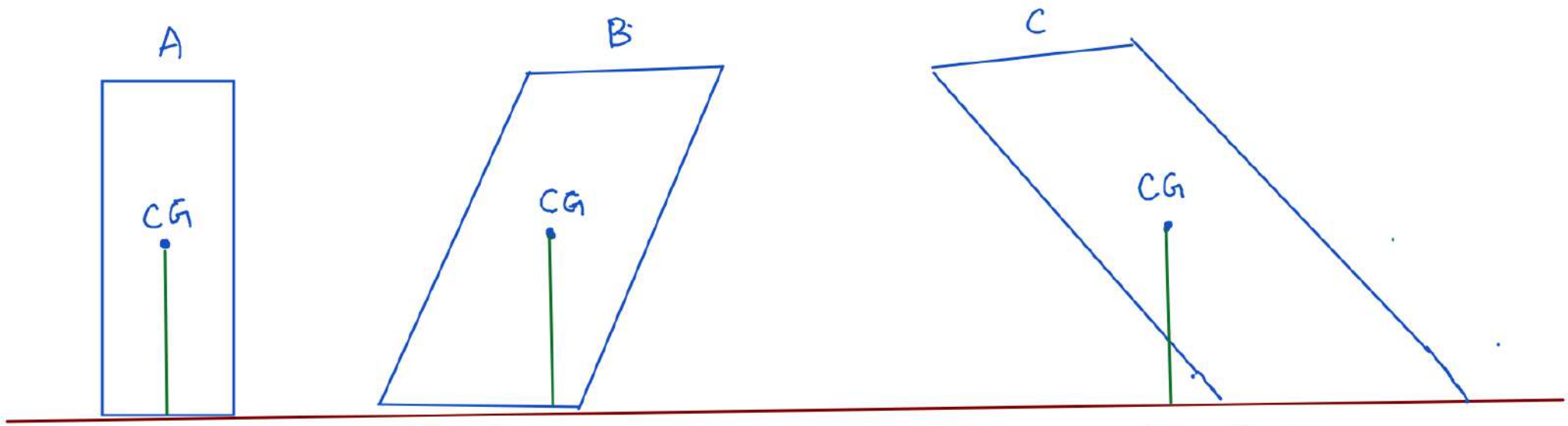
CG → centre of gravity



Make three holes at three different sides of the lamina and suspend it through one of the hole, draw the line extending the direction of suspended thread. Repeat the experiment with other two holes. All the lines meet at one point called centre of gravity of the irregular lamina.

irregular lamina

Stability and unstability in terms of centre of gravity



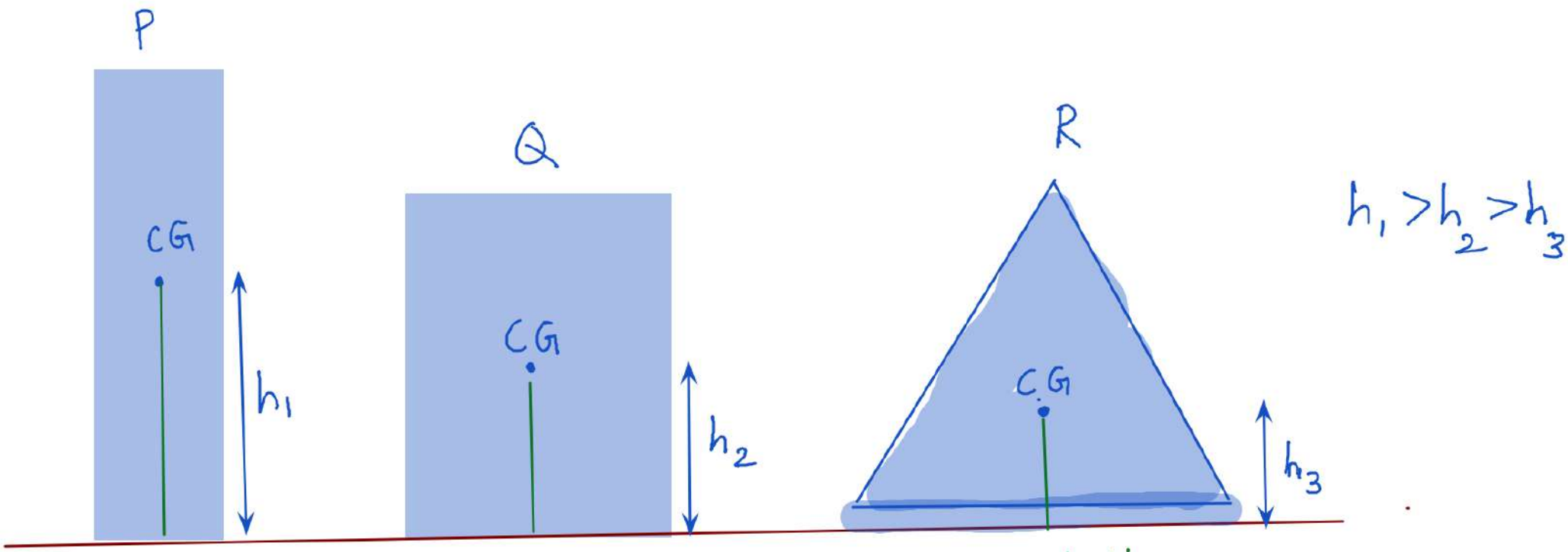
Stable

Stable

Unstable.

The line passing through centre of gravity and perpendicular to the ground touch the bottom of the object for a stable object, does not touch the bottom of the object for an unstable object.

More stable and less stable based on position of centre of gravity:



In case of a stable object, greater the height of centre of gravity from the ground, lesser is the stability of the object and vice-versa.

Conversion of energy

① While cycling, the chemical energy from the food is converted into muscular energy, muscular energy is converted into kinetic energy, heat and sound energy.

② While lamp connected to a battery glowing, the chemical energy stored in the battery is converted into electvical energy, electrical energy is converted into kinetic energy,

Conversion of energy

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② While lamp connected to a battery glowing, the chemical energy stored in the battery is converted into electvical energy, electrical energy is converted into kinetic energy, kinetic energy is converted into heat and light energy.

Work done: When an object moves a distance by the application of force in the direction of motion, the work done is said to be the product of force and distance.

$W = F \times d$ SI unit is Nm (or) joule (J)

one joule = one newton x one meter

Mechanical work done is equal to the change in energy.

$W = F \times d = \Delta E$

Energy resources :

Chemical energy is stored in fossil fuels, bio fuels.

In case of water, energy is stored in waves, tides, g.p.e in stored water at a height, kinetic energy in case of flowing water.

Hot springs contain geothermal energy.

Nuclear fuel (such as uranium) has nuclear energy

In solar cells, light from Sun generates electrical energy

From the Sun, energy is recieved in the form of infra red and other electro-magnetic waves (thermal energy or heat energy)

Wind mills make use of wind energy to convert into electrical energy.

Radiation from the Sun is the main source of energy for all our energy resources except geothermal, nuclear and tidal energies.

geothermal
Nuclear
tidal
} energies are not obtained from the Sun.

Which of the following is not obtained from Sun

wind
tidal ✓
fossil
solarenergy