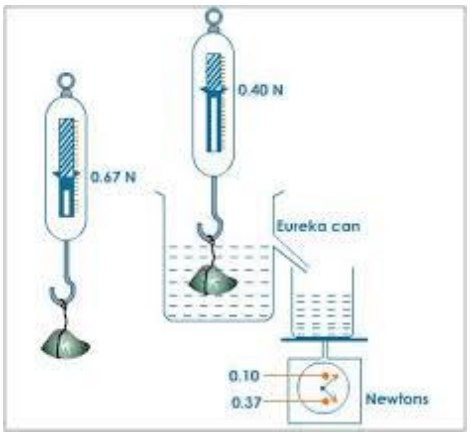
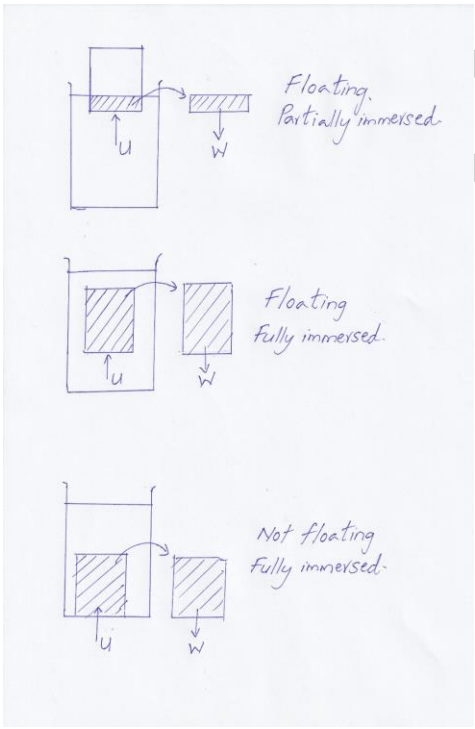
Question 13



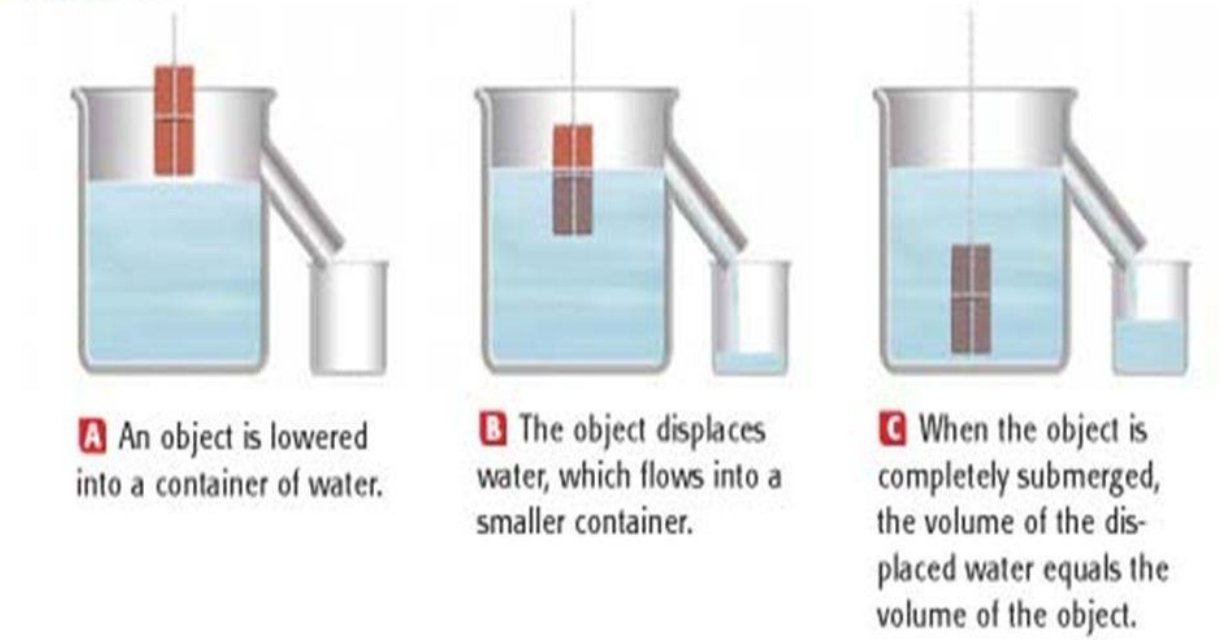
Weight of object in air = ...
Weight of object in water = ...
Upthrust force = ...
Weight of beaker + water = ...
Weight of beaker = ...
Weight of water displaced = ...

Archimedes' Principle



- When an object is submerged …….. or …….. in a ……,
- the ……..exerted by the …….. on the ……..
- is ……..
- the …….. of the…….. displaced by the ……..

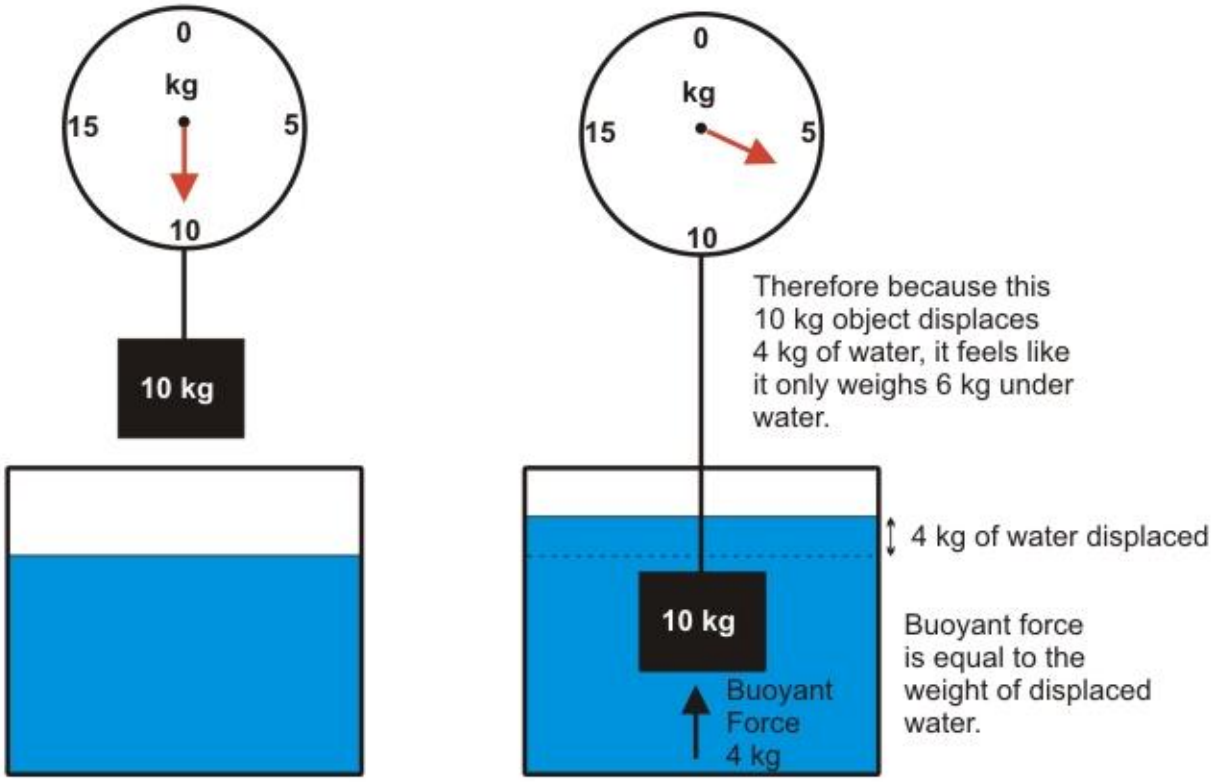
Archimedes' Principle



A An object is lowered into a container of water.

B The object displaces water, which flows into a smaller container.

C When the object is completely submerged, the volume of the displaced water equals the volume of the object.



Question 14

When an object was measured in air, its weight was 10N. When it was measured in water, its weight was 6N.

(i) **Find the Upthrust force**

(ii) **Find the weight of water displaced**

(i) Weight of object in air = ...

Weight of object in water = ...

Upthrust force = ...

(ii) Weight of water displaced = ...

Question 15

The weight of an object in air was 8N. The it was immersed in water it displaced 200cm^3 of water. Find the weight of the object in water. (Density of water is 1gcm^{-3}. g=10ms^{-2})

Density of water = …….
Volume of water displaced = …….
Mass of water displaced = ……. x …….
= ……. x …….
= …….
Therefore the weight of water displaced = ……. x …….
= ……. x …….
= …….
Therefore the Upthrust force = …….
Therefore the weight of object in water = ……. - …….
= ……..

Question 16

When an object having a mass of 1.5kg was immersed in water, its weight was 11N. Find the volume of water displaced. (Density of water is 1gcm^{-3}. Gravitational acceleration is 10ms^{-2})

Mass of object = …….
Therefore the weight of object = ……. x …….
= ……. x …….
= ……
Weight of the object in water = ……
Therefore the Upthrust force = …… – ……
= …….
Therefore the weight of water displaced = ……
Therefore the mass of water displaced = ……. / …….
= …… / ……
= ……..
= ……
Density of water = ……
Volume of water = ……./…….

= ……./……

= ……..

Question 17

The weight of an object in water was 12N. It displaced 200cm^3 of water. Find the weight of the object in air. (Density of water is 1gcm^{-3}. The gravitational acceleration is 10ms^{-2})

Volume of water displaced = ……
Density of water = ……
Therefore the mass of water displaced = …….. x ……..
= …….. x ……..
= ……
Therefore the weight of water displaced = …….. x ……
= ……/…….. x ……
= ……
Therefore the Upthrust force = ……

Weight of object in water = ……
Weight of water in air = …….. + ……
= ……..