# PRINCIPLES OF MOMENT

## AIM

1) To find the mass of the given body using a Metre Scale

## APPARATUS

Metre Scale, slotted weights, weight hanger, given body etc.

## THEORY

The Moment Bar works with the Principles of Moments. If two masses $\mathbf{m_1}$ and $\mathbf{m_2}$ suspended on a metre scale horizontal, when the scale is suspended on the Centre of Gravity,

we can write

$$\mathbf{m_1 r_1 = m_2 r_2}$$

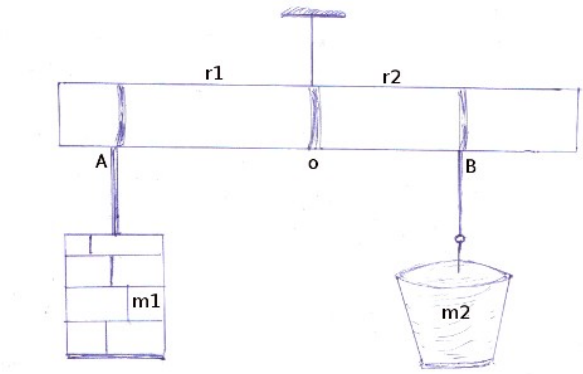
where

$\mathbf{m_1}$ is the known mass inserted in the slotted weight

$\mathbf{m_2}$ is the unknown mass

$\mathbf{r_1}$ is the distance between the centre of gravity and the known mass and

$\mathbf{r_2}$ is the distance between the centre of gravity and the unknown mass




## OBSERVATIONS

Reading of the Centre of Gravity of the scale (G) = cm

Distance betwee the weight hanger and the Centre of Gravity (G) $r_1$ = cm

| Trial No | Mass inserted on the weight hanger($m_1$) | Distance between Centre of Gravity and unknown mass ($r_2$) | Unknown Mass $m_2 = (m_1 r_1) / r_2$ | Mean $m_1$ |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |

Mass of the given body = g = kg

## RESULT

Mass of the given body = kg