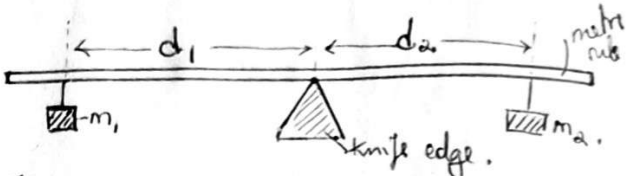
MOMENTS.

EXPERIMENT TO VERIFY THE LAW OF MOMENTS.



✓ The meter rule is balanced on the knife edge at its midpoint.
✓ masses M_1 and M_2 are suspended such that M_1 is on one side of the fulcrum and M_2 on the other side.
✓ The positions of M_1 and M_2 are adjusted till the ruler is in equilibrium in a horizontal position.
✓ The distances d_1 (from M_1 to fulcrum) and d_2 (from M_2 to fulcrum) are read and recorded.
✓ The experiment is repeated using different sets of masses.
✓ The results are tabulated in a suitable table including values of $M_1 d_1$ and $M_2 d_2$.
✓ It is observed that $M_1 d_1 = M_2 d_2$
Hence verifying the law of moments.

Table.

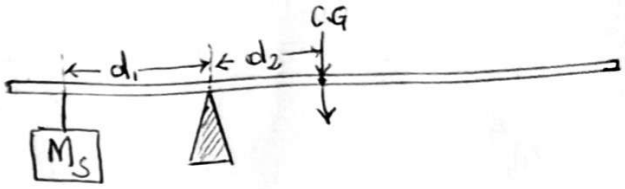
M_1(g) M_2(g) d_1(cm) d_2(cm)

M_1(g)	M_2(g)	d_1(cm)	d_2(cm)	$M_1 d_1$(gcm)	$M_2 d_2$(gcm)
50	100				
100	200				
150	300				
200	400				
250	500				

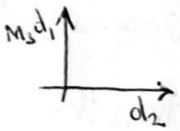
By N.Merard 0745644028/0779990583

MOMENTS.

Determining Mass of the metre rule using standard mass.



✓ The metre rule is balanced on the knife edge and the centimeter mark is recorded at the balance. (This is the centre of gravity)
✓ A known mass M_s is suspended near one end of the meter rule.
✓ The meter rule is adjusted until it balances horizontally.
✓ The distances d_1 and d_2 from the pivot are to the mass and to the centre of gravity mark respectively are recorded.
✓ The experiment is repeated for other values of M_s.
✓ The results are tabulated including values of $M_s d_1$.
✓ A graph of $M_s d_1$ against d_2 is plotted.



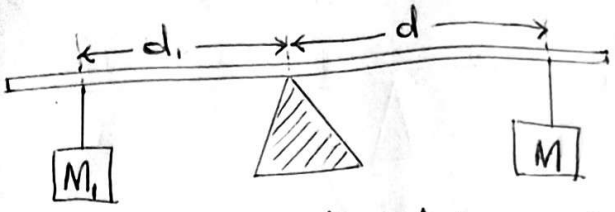
✓ The slope is determined
Slope, $s = \frac{\Delta M_s d_1}{\Delta d_2}$ = mass of the metre rule.
r = mass of the ruler.

Table of results.

M_s(g)	d_1(cm)	d_2(cm)	$M_s d_1$
100			
200			
300			
400			
500			

MOMENTS.

Determining the unknown mass using a metre rule and a standard mass.



✓ The metre rule is balanced horizontally on the knife edge.
✓ Masses M and M_1 are suspended on the sides of the metre rule with the pivot in the middle.
✓ The distances are adjusted for the system to balance again.
✓ The distances d and d_1 are measured and recorded from the pivot to the ~~unknown~~ mass M and M_1 respectively.
✓ The result are tabulated including values of M_1d_1.
✓ A graph of M_1d_1 against d_1 is ploted.
✓ The slope is determined.

Slope $S = \frac{\Delta M_1 d_1}{\Delta d}$

Thus the slope is the mass of required graph.

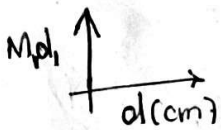
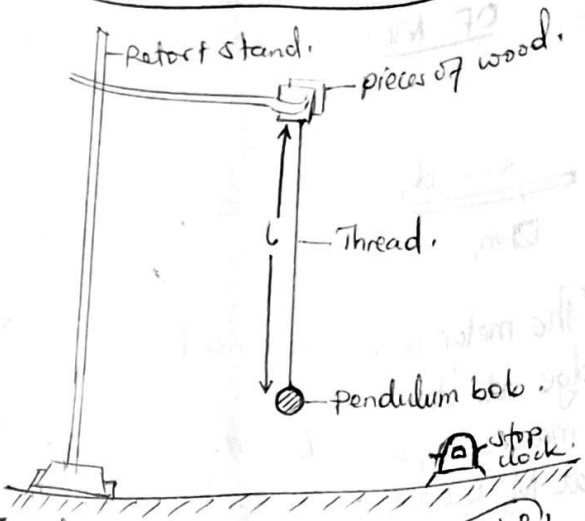


Table of results.

M_1 d_1

M_1(g)	d_1(cm)	d(cm)	m_1d_1(gcm)
100			
200			
300			
400			
500			

DETERMINING "g"
ACCELERATION DUE TO GRAVITY.



Formula $g = \frac{4\pi^2}{slope}$.

Procedures:
✓ The length l, of the pendulum bob is measured and recorded.
✓ The pendulum bob is displaced through a small angle and allowed to oscillate.
✓ The time t, for 20 oscillations is noted
✓ The experiment is repeated for different increasing values of l.
✓ The results are tabulated including the values of T and T^2.
✓ A graph of T^2 against l is plotted
✓ the slope(s) is calculated.

The acceleration due to gravity $g = \frac{4\pi^2}{S}$.

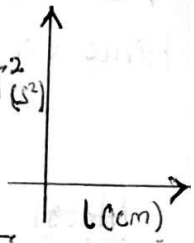


Table of results.

l(cm)	t(s)	T(s)	$T^2(s^2)$

Note:
$T = \frac{t}{20}$.

By N. Merard ~~0779~~ 0745644028
0779990583.