Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____
Group Number_____Student Number_____Name_____Grade_____

Lab14 Optical lever

Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____

Group Number_____Student Number_____Name_____Grade_____

Lab14 Optical lever

	Reading before the tested sample is placed h_1	Reading after the tested sample is placed h_2	Scale difference $D = h_2 - h_1$	Distance between mirror and meter stick S	Distance between front and hind legs of optical lever	Thickness of tested sample d	Mean (mm)
1							
2							
3							
4							

Imprint of optical lever tripod

Discussion:

Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____
Group Number_____Student Number_____Name_____Grade_____

Lab15 Young's modulus of metals

Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____

Group Number_____Student Number_____Name_____Grade_____

Lab15 Young's modulus of metals

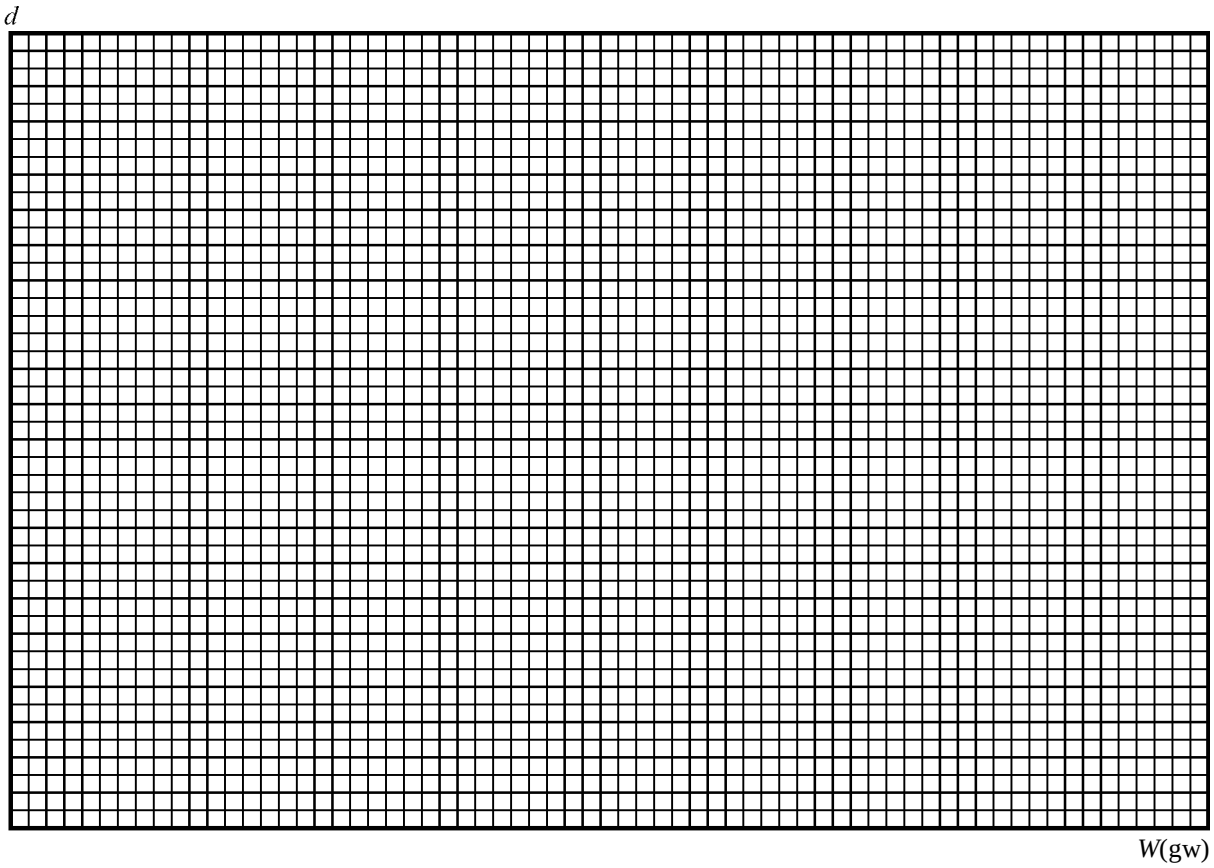
1. Beam *A*

	Material	Distance between cutting edges of stand	Width w	Height h	$K = L^3/4wh^3$	S
1.						
2.						
3.						

2. Distance between front and hind legs of optical lever l = _____

Beam material	No.	Mass of weights M	Increasing weight		Decreasing weight		Mean d
			D	$d = lD/2S$	D	$d = lD/2S$	
1.	1.	200					
	2.	400					
	3.	600					
	4.	800					
	5.	1000					
2.	1.	200					
	2.	400					
	3.	600					
	4.	800					
	5.	1000					
3.	1.	200					
	2.	400					
	3.	600					
	4.	800					
	5.	1000					

4. Graphical method:



Eq. (5) gives $Y = KW/d$

$d = (K/Y)W$

$K/Y = slope \Rightarrow Y = K/slope$

Material	Slope	Y (dyne/cm^2)	Standard Y	Error (%)
1.				
2.				
3.				

Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____
Group Number_____Student Number_____Name_____Grade_____

Lab16 Resonance of air columns

Date_____Room Temp. _____BP (Barometric Pressure)_____Department_____

Group Number_____Student Number_____Name_____Grade_____

Lab16 Resonance of air columns

1. Closed pipe

Frequency f Hz	Position (cm)					Mean half-wavelength (cm)	Wavelength λ (cm)	Speed of sound $v(m/s)$
	1	2	3	4	5			
							Mean speed of sound v (Experimental value)	

Temperature in laboratory T = _____ v (Experimental value) = _____

Known speed of sound v_t = _____ Error (%) = _____

2. Open pipe

Frequency f Hz	Position (cm)					Mean half-wavelength (cm)	Wavelength λ (cm)	Speed of sound $v(m/s)$
	1	2	3	4	5			
							Mean speed of sound v (Experimental value)	

Temperature in laboratory T = _____ v (Experimental value) = _____

Known speed of sound v_t = _____ Error (%) = _____