School				Mark (10)
Name		HKID		
Class (No.)		Date		

C7 Refractive Index by Tracing Light Rays

Answers to Preview Questions

1. _____

2. _____

   _____

3. _____

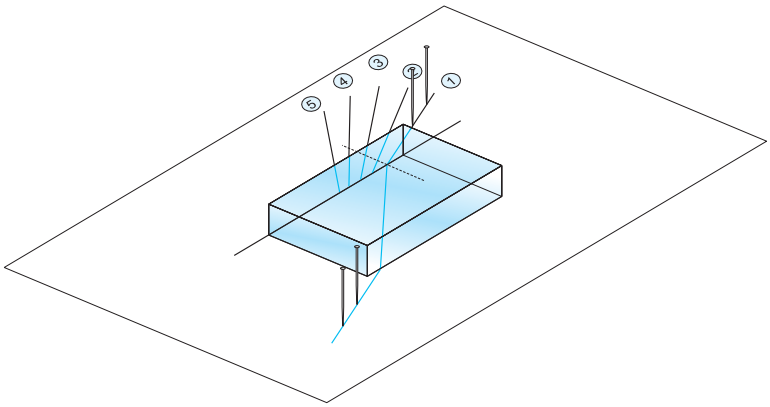
   _____

4. _____

   _____

   _____

Experiment 1 Refractive index of a glass block

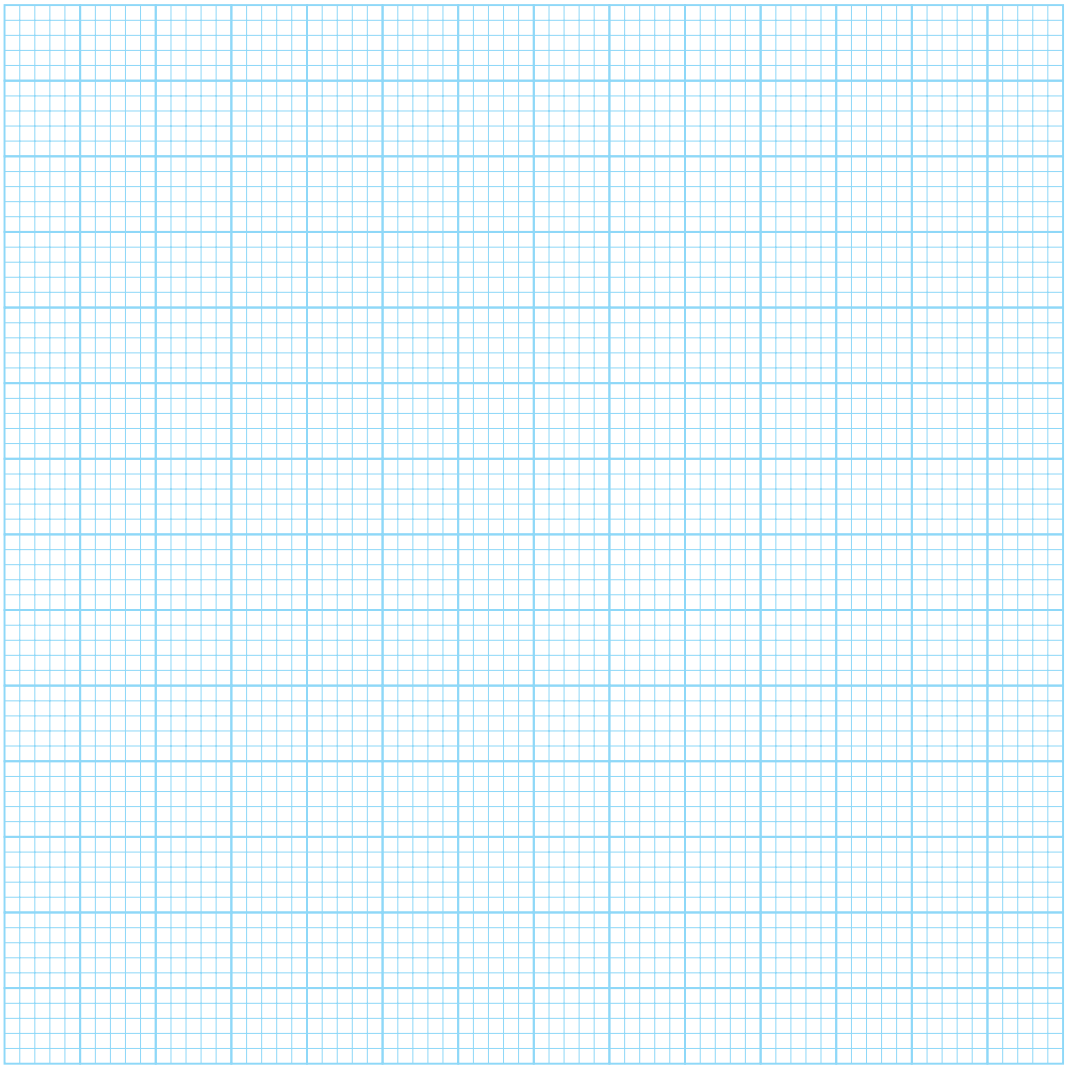


Experiment 1

Table 1

	Ray 1	Ray 2	Ray 3	Ray 4	Ray 5
Angle of incidence, i /degree					
Angle of refraction, r /degree					
sin i					
sin r					

Teacher's Remark



Plot of sin *i* against sin *r*

Data Analysis 1

3. Mean of sin *i* _____

   Mean of sin *r* _____

5. Slope of best-fit, *m* _____

   Refractive index of glass, n_g _____

7. Maximum slope, m^+ _____

   Minimum slope, m^- _____

   $|m^+ - m|$ _____

   $|m - m^-|$ _____

   Δm _____

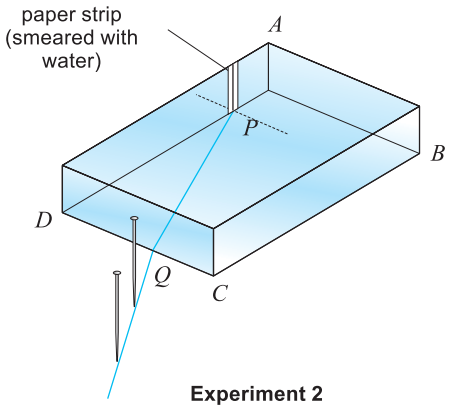
Teacher's Remark

8. $\frac{\Delta m}{m} \times 100\%$ _____

9. Absolute error in n_g _____

   Refractive index of glass, n_g _____

Experiment 2 Refractive index of water by the critical angle method



Experiment 2

Table 2

Trial	1	2	3	4	5
Critical angle, c /degree					

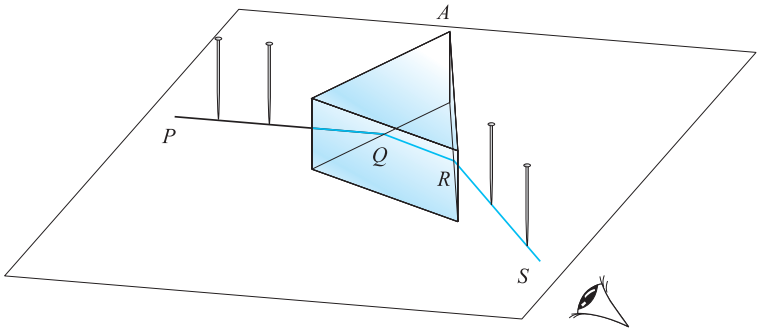
Data Analysis 2

1. Mean value of c _____
2. Refractive index of water, n_w _____

   _____

Experiment 3 Refractive index of prism by finding the angle of minimum deviation

Teacher's Remark



Experiment 3

Table 3

	Glass prism	Quartz prism
Angle of prism, A / degree		
D_{min} / degree		
Refractive index		

Answers to Discussion

1. _____

_____

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2. _____

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3. _____

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4. _____

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