

# Integrated Optics - Angle of Prism

## Apparatus Available :

- spectrometer
- spirit level
- magnifying glass
- glass prism
- sodium vapour lamp

## Aim :

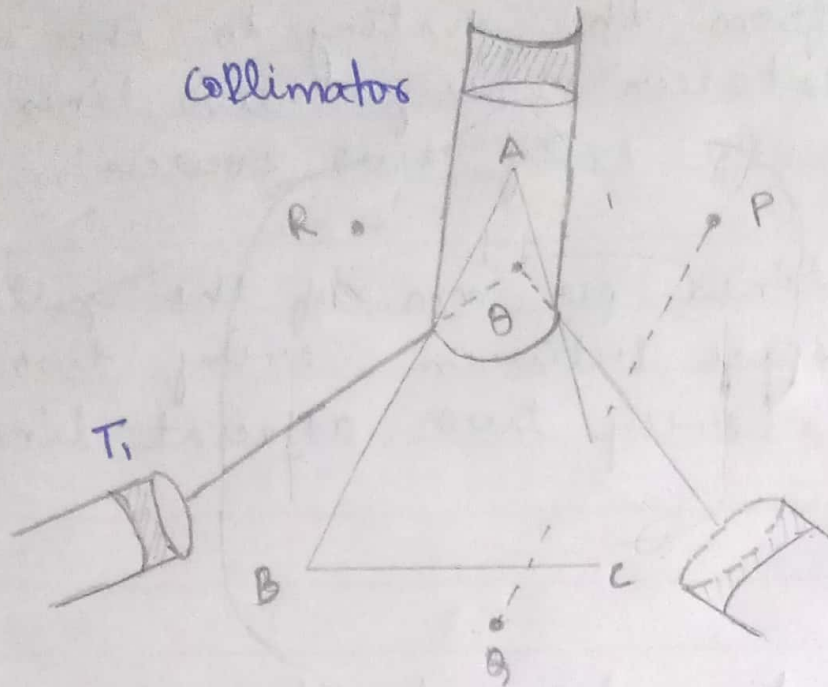
To determine the apex angle of the given prism using a spectrometer

## Tabulation :

$$\text{Least Count} = \frac{0.5'}{30 \text{ divisions}} = 1'$$

Reading of reflected ray	Vernier A			Vernier B		
	MSR	VSR	Total	MSR	VSR	Total
Reflection from side (a) AB	<del>175°</del> 175°	<del>0'</del> 17'	<del>175°</del> 175.28°	<del>354°</del> 354.5'	<del>0'</del> 7'	<del>354°</del> 354.6°
Reflection from side (b) AC	<del>235°</del> 56°	<del>0'</del> 15'	<del>235°</del> 56.25°	<del>235°</del> 235°	<del>0'</del> 8'	<del>235°</del> 235.13°
Reflection from side (a) - (b) (Difference between (a) & (b))	<del>175°</del> 120.01°	<del>0'</del>		<del>354°</del> 119.48°		

Teacher's Signature : .....



Ray diagram for Angle of Prism

$$\text{Mean } \theta = 59.87^\circ$$

Result

The Apex angle of the given equilateral prism =  $59.87^\circ$

Calculation

~~Hway~~  
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~~19 BCE 2074~~

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$$\text{Total} = \text{MCR} + \text{NSR} \times \text{LC}$$

$$1^\circ = 60'$$

$$\text{Total} = 175' + \frac{17}{60} \times 1 = 175.28'$$

$$= 354.5' + \frac{7}{60} \times 1 = 354.61'$$

$$= 55' + \frac{15}{60} \times 1 = 55.26'$$

$$= 235' + \frac{8}{60} \times 1 = 235.13'$$

Diff 1

$$175.28 - 55.25 = 120.03'$$

$$354.61 - 235.13 = 119.48'$$

$$\text{Mean } \theta = \frac{239.51}{4} = 59.87'$$