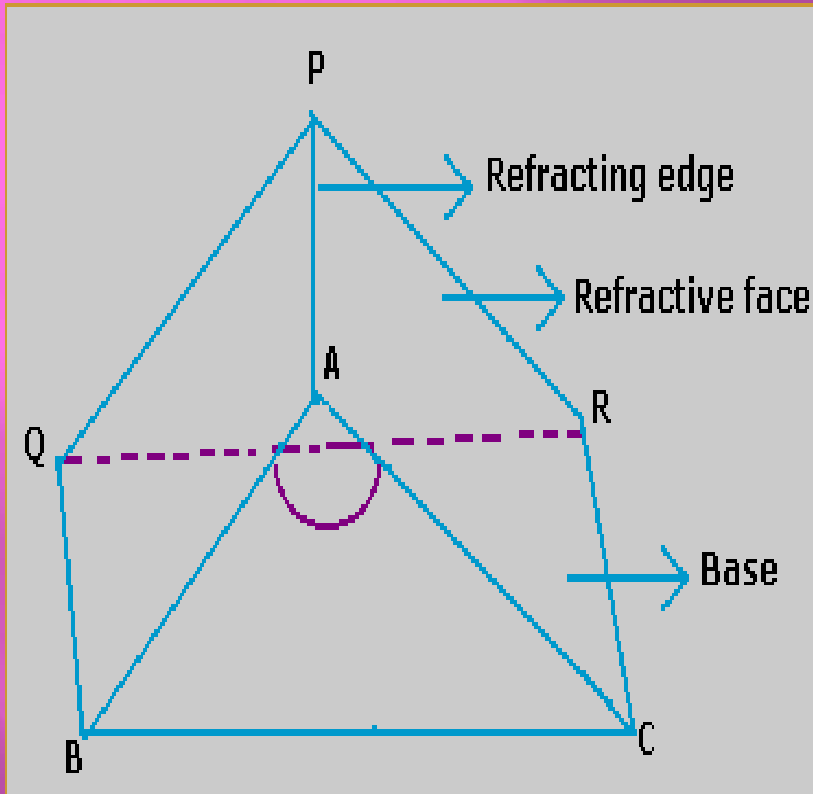


REFRACTION THROUGH A PRISM

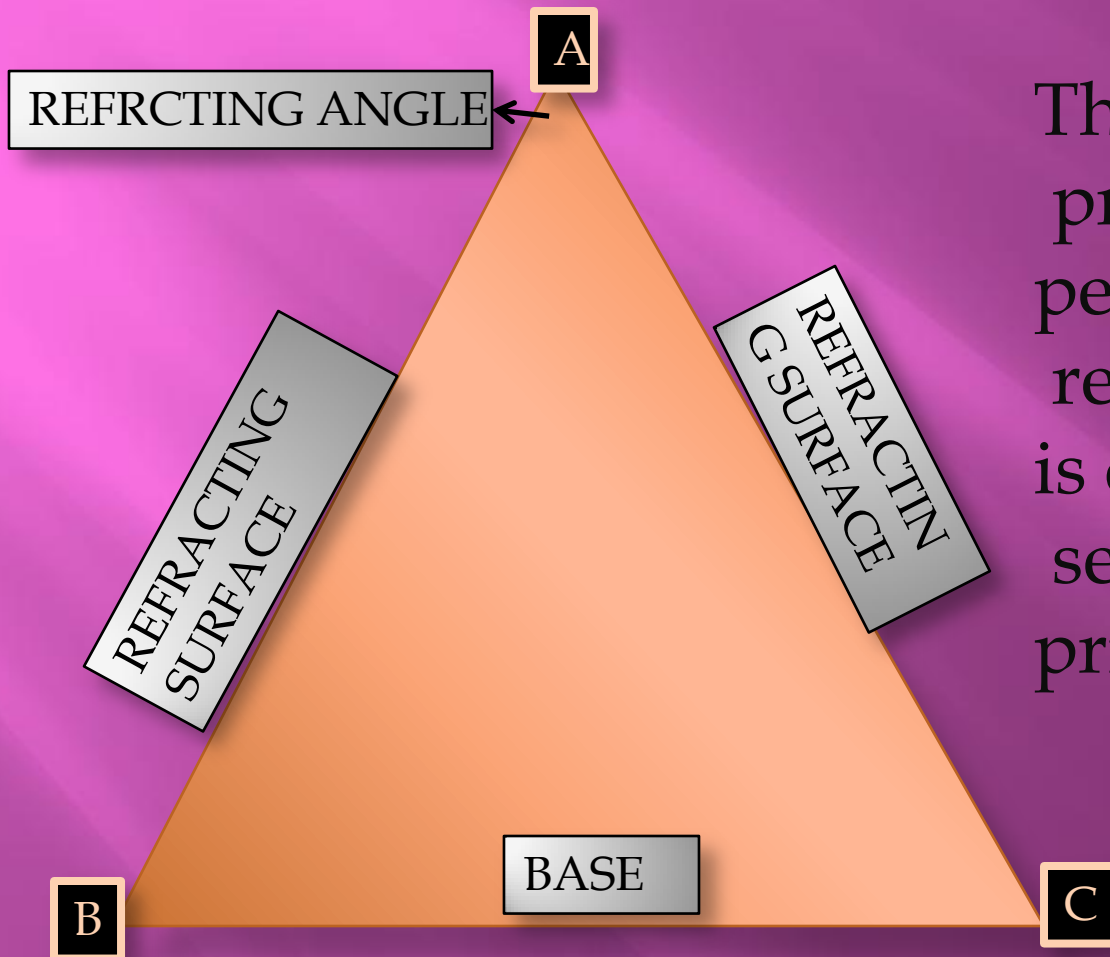


PRISM



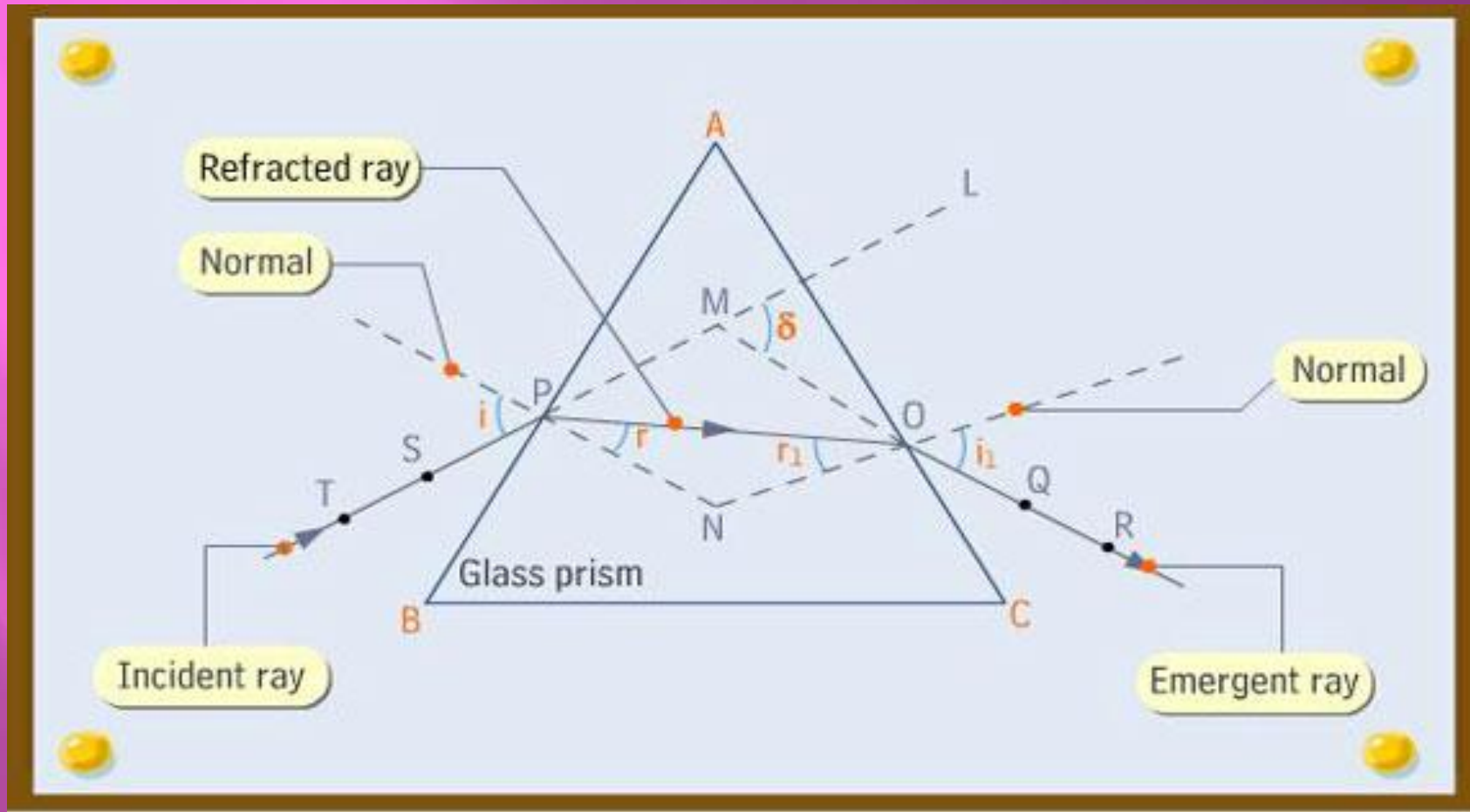
A prism is a transparent refracting medium bounded by two plane surfaces making an angle with each other.

PRINCIPAL SECTION OF THE PRISM



The section of the prism perpendicular to the refracting edge is called the principal section of prism.

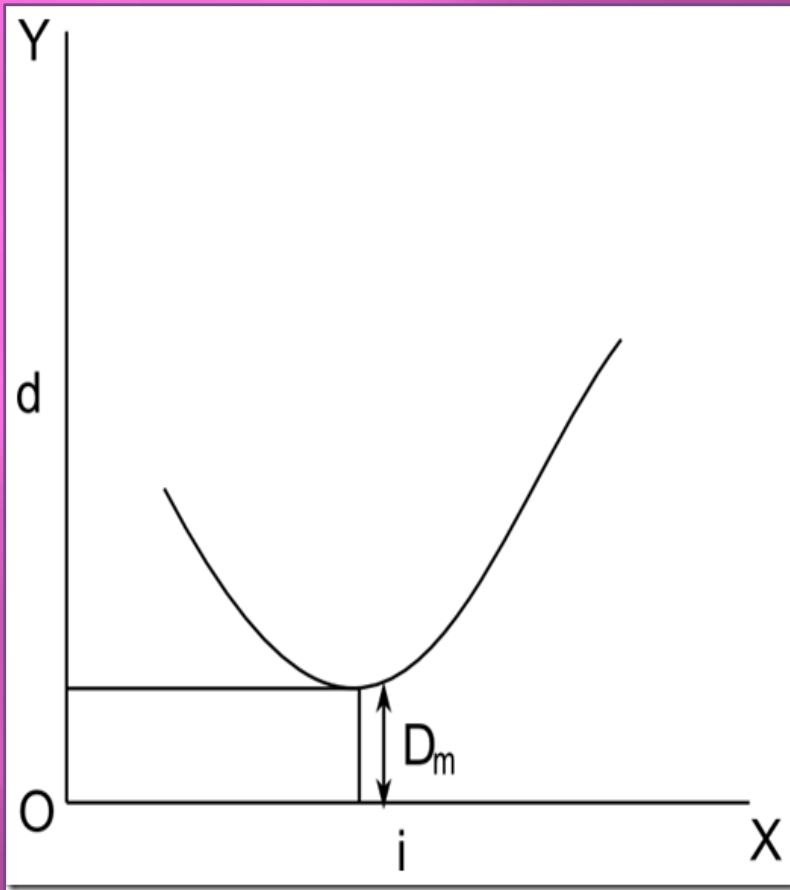
DEVIATION BY A PRISM



Factors affecting the angle of deviation

1. The angle of incidence
2. The material of the prism
3. The angle of the prism
4. The colour or wavelength of light used.

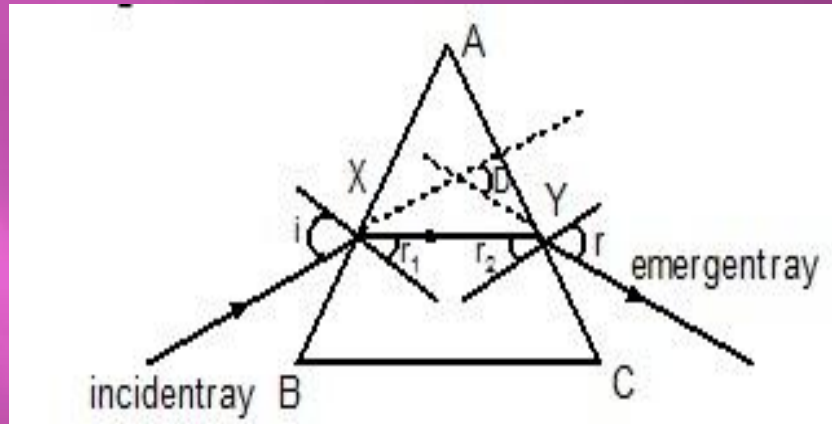
Dependence of angle of deviation on the angle of incidence i - δ curve



As the angle of incidence increases, the angle of deviation goes on decreasing till for a certain angle of incidence it attains the minimum value which is known as angle of minimum deviation.

When the angle of incidence is increased further, the angle of deviation now starts increasing.

Relation between angle of incidence, angle of prism, angle of deviation and angle of emergence



A light ray striking at one face of a triangular glass prism gets refracted twice and emerges out from the other face as shown above. The angle between the emergent and the incident rays is called the angle of deviation (D). The angle between the two refracting faces involved is called the refracting angle (A) of the prism.

From AXY , we have: $A + (90^\circ - r_1) + (90^\circ - r_2) = 180^\circ$

As $r_1 + r_2 = A$

Deviation $D = (i - r_1) + (e - r_2)$

$$D = (i + e) - (r_1 + r_2)$$

$$D = i + e - A$$

$$A + D = i + e$$