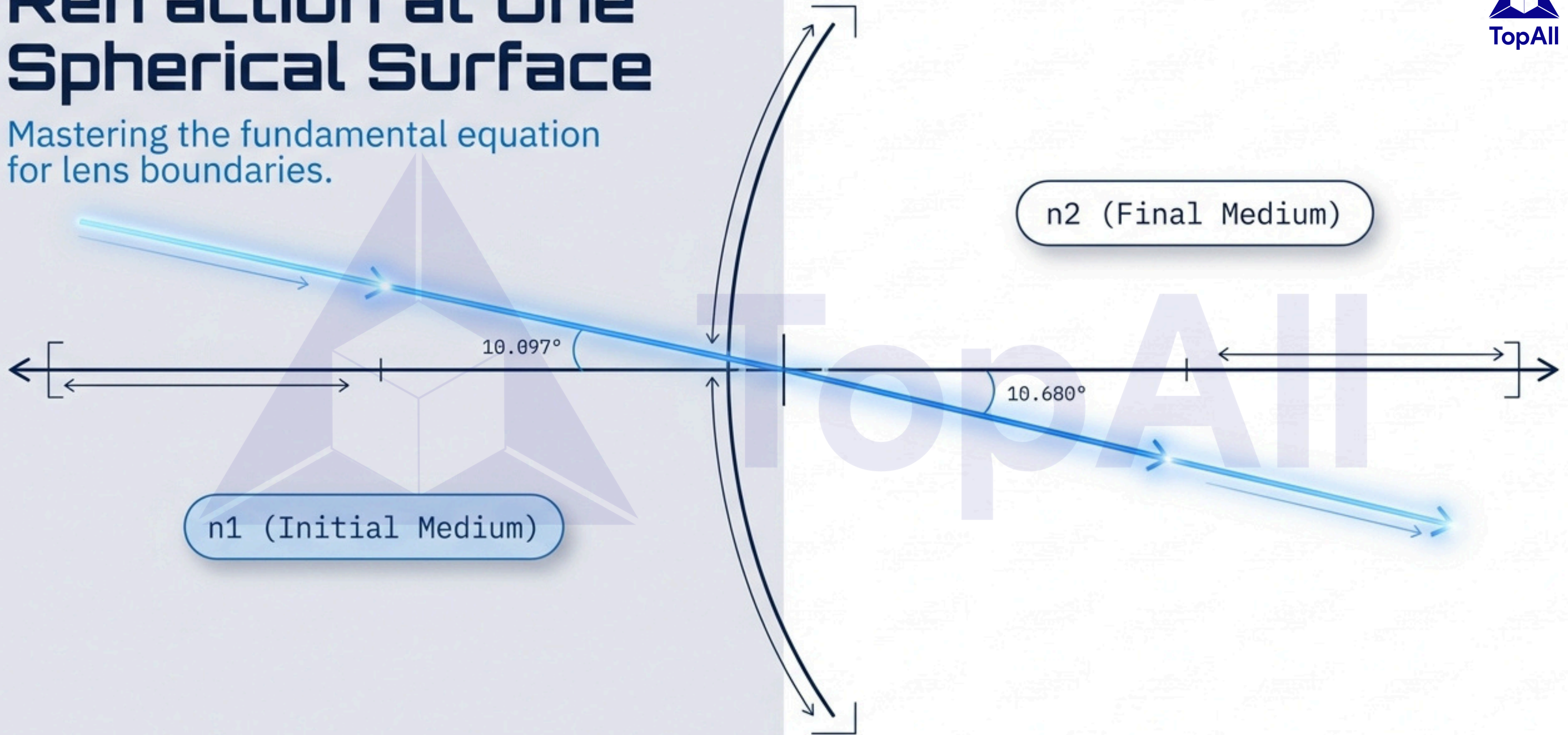
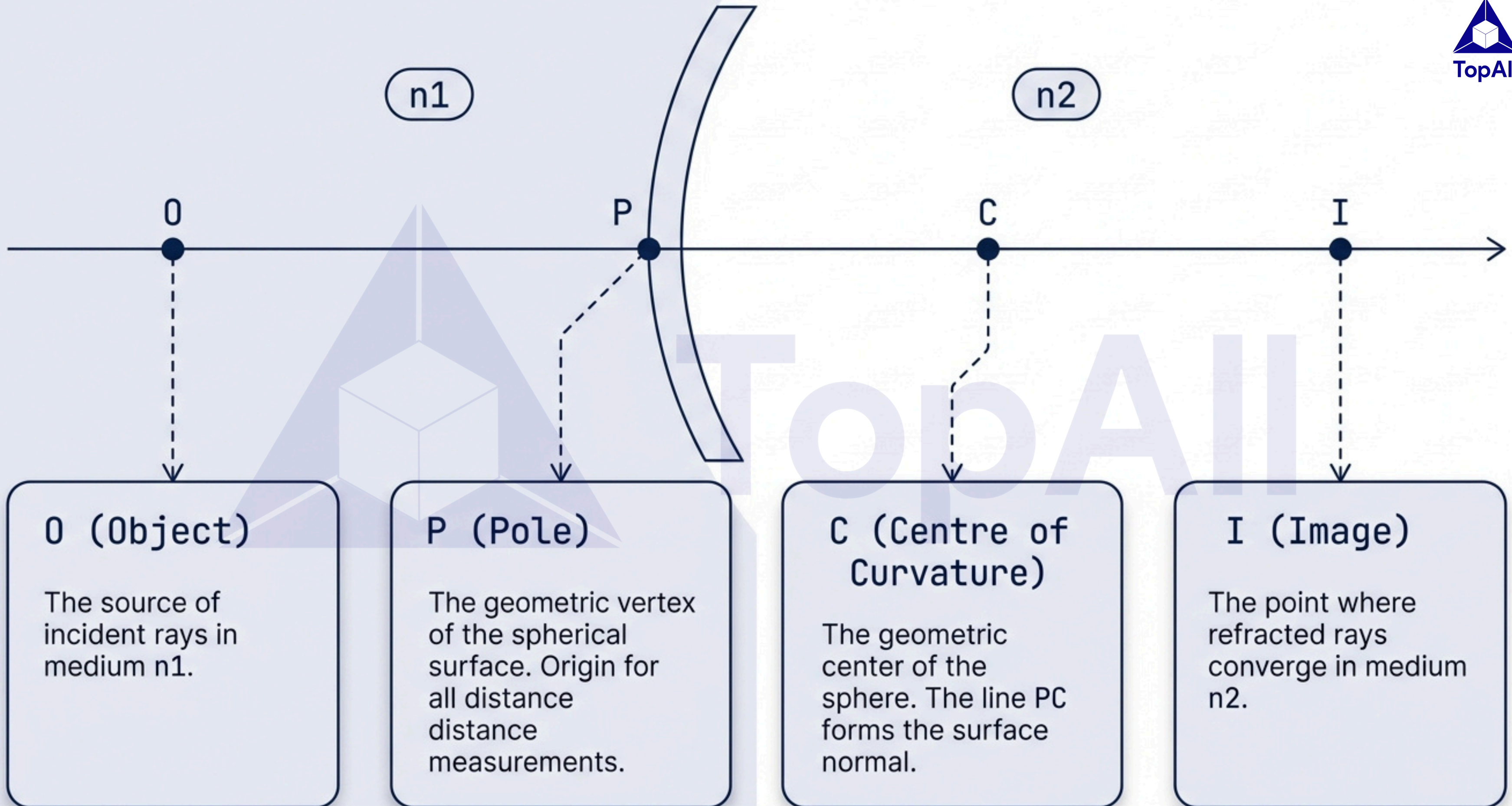
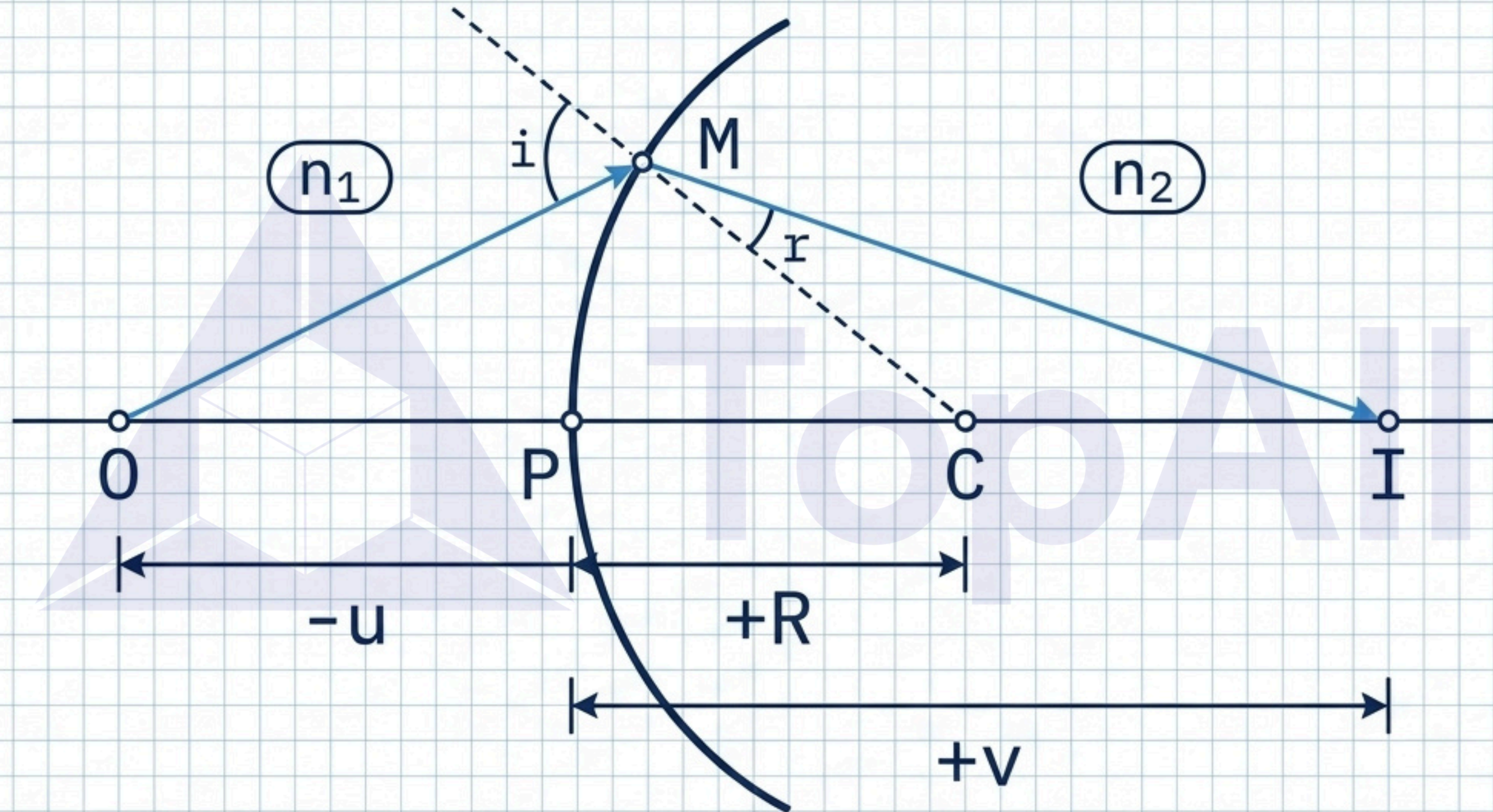


Refraction at One Spherical Surface

Mastering the fundamental equation for lens boundaries.



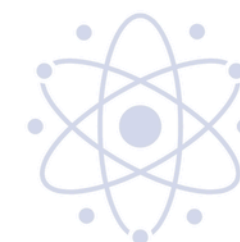






You've Learned the Theory. Let's Test Them Now.

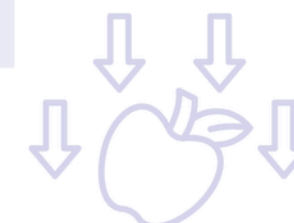
$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**



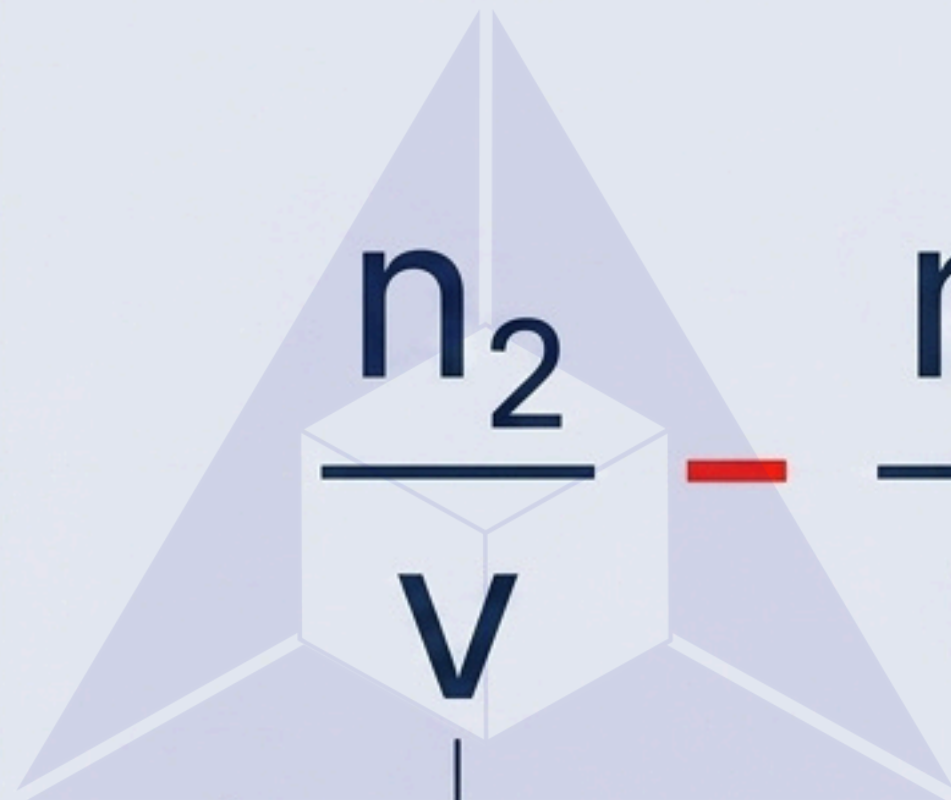
Practice Now → [At prep.topall.app](https://prep.topall.app)

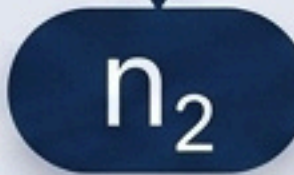


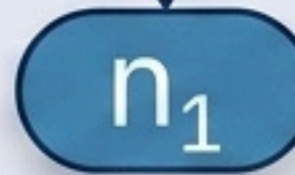
Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter

The Spherical Refraction Equation


$$\frac{n_2}{V} - \frac{n_1}{U} = \frac{n_2 - n_1}{R}$$

 Refractive index of the medium where rays go.

 Refractive index of the medium where rays come from.



JEE Trap Alert!

Do not blindly memorize 'n1' as 'air' and 'n2' as 'glass'.



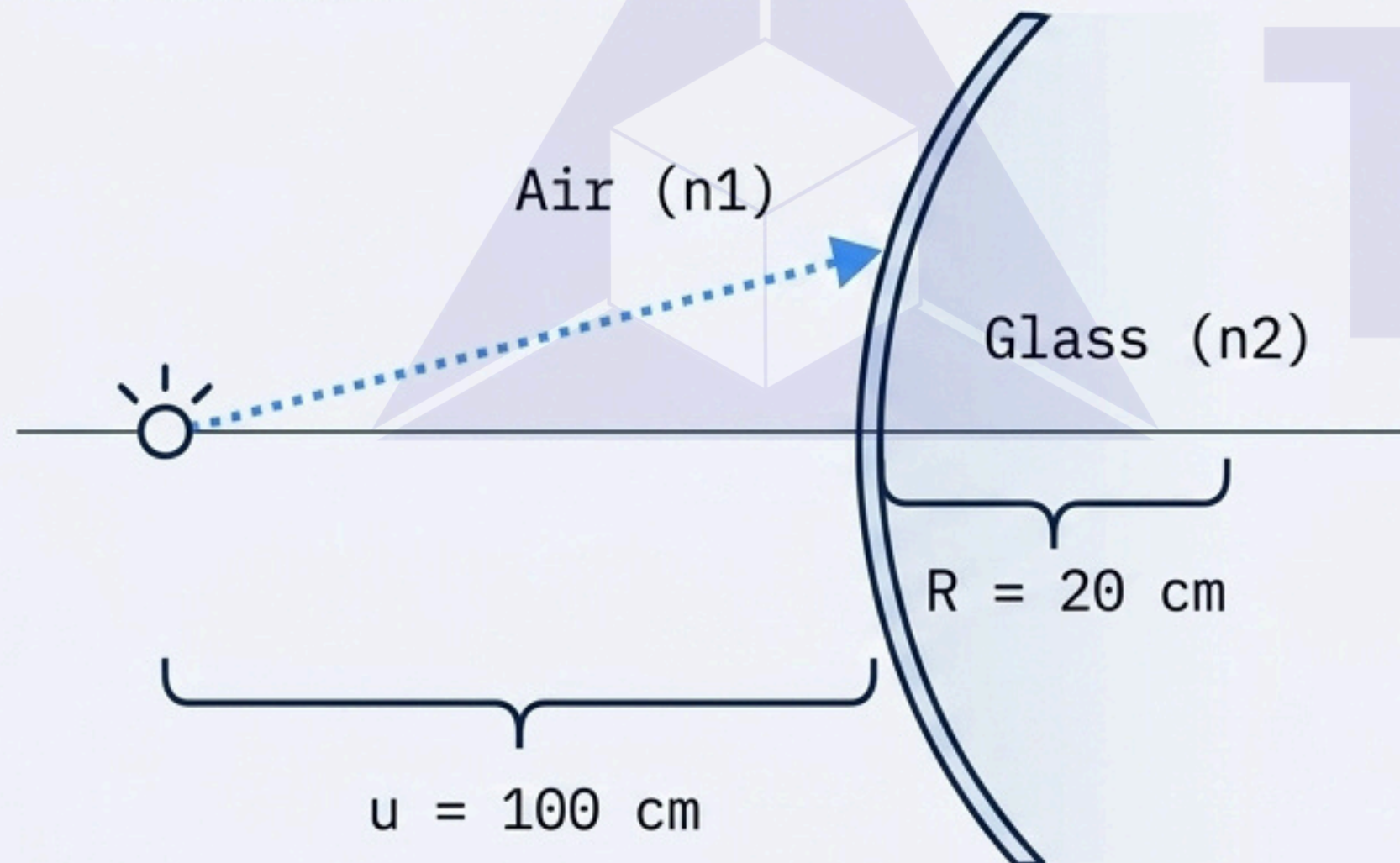
Swapping n_1 and n_2 when light travels from Glass to Air (e.g., forcing $n_1 = 1$ just because it's the first number you think of).



n_1 is ALWAYS the initial medium (where the object is).
 n_2 is ALWAYS the final medium (where the refracted ray goes).

Mini Problem: Assigning Signs

Light from a point source in air falls on a convex glass surface ($R = 20 \text{ cm}$). The source is 100 cm away. Assign values for the formula.



Initial Medium (n_1): Air = 1

Final Medium (n_2): Glass = 1.5

Object Distance (u): [-]
 100 cm (Measured against incident light)

Radius (R): [+]
 20 cm (Measured along incident light)

Final Revision: Spherical Refraction

Rule 1 (The Equation)

$$n_2 / v - n_1 / u = (n_2 - n_1) / R$$

Rule 2 (The Golden Pairing)

Final medium always pairs with **v** (image distance).
Initial medium always pairs with **u** (object distance).

Rule 3 (The Cartesian Law)

Always place your ruler's zero at the **Pole**. Measuring **WITH** the incident light is positive. Measuring **AGAINST** it is negative.



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis