

EXPERIMENT - 1

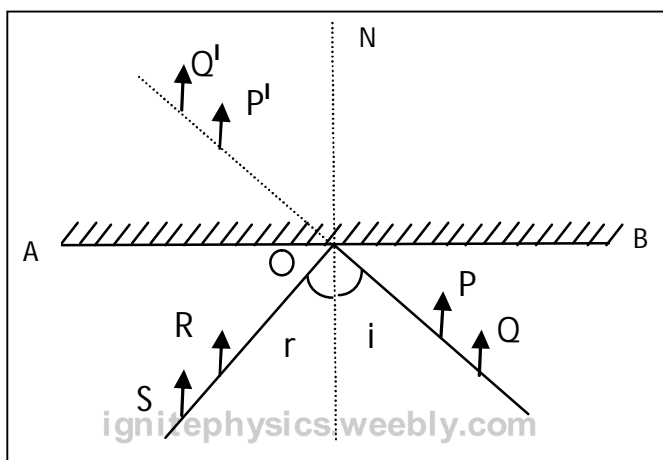
LAWS OF REFLECTION

Aim : To prove the Laws of reflection by using plane mirror.

Required : Drawing board-1, White paper, Drawing pins-4, Pins-4, Plane mirror, Wooden block, Pencil, Protractor, Scale

Description: Laws of reflection :

- * Angle of incidence is equal to angle of reflection.
- * Incident ray and reflected ray are either side to the normal drawn to the surface at point of incidence.



Procedure :

1. Fix a white paper on the drawing board with the help of drawing pins.
2. Draw a straight line AB at the centre of the paper.
3. Draw a normal line ON to the line AB at a point 'O' on AB.
4. Draw a straight line PQ such that it makes certain angle (i) with ON. (Incident ray)
5. Fix two pins at P and Q points vertically on the line PQ.
6. Observe the image P^l of the pin P and Q^l of the pin Q, in the mirror kept vertically along the line AB. (Keep wooden block to support the mirror.)
7. Fix two more pins R and S such that they are in the same line as that of P^l and Q^l.
8. Join R , S and O. (Reflected ray)
9. Measure the angle between RS and ON. Note down it as (\hat{r}). This angle of reflection.
10. Note down the observations in the table.
11. Observe how the angle of incidence and angle of reflection are ?
12. Compare the position of incident ray and reflected ray with respect to normal.
13. Repeat the same procedure for various incident angles 2 or 3 times.

Observation :

| SI No | Angle of incidence (i) | Angle of reflection (r) | Position of incident ray and reflected ray (Same side to the normal / either side of the normal) |
|-------|---------------------------|----------------------------|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |

- We observed that angle of incidence is equal to angle of reflection in all cases.
(First law of reflection)
- We observed that incident ray and reflected ray are either side to the normal drawn to the surface at point of incidence in all cases.
(Second law of reflection)

Precautions :

- ❖ Fix the pins without parallax error.
- ❖ The mirror should not move until the each experiment is over.

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Result : The Laws of reflection by using plane mirror are verified.

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