

HW

Q2. Define spectrum?

Ans → The band of colours obtained on a screen on passing white light through a prism is called spectrum. The various colours seen are violet, indigo, blue, yellow, orange and red. The band of the coloured components of a light beam is called spectrum.

HW

Q1. Why is a normal eye not able to see clearly the objects placed closer than 25 cm?

Ans → A normal eye cannot see clearly the objects that are placed closer than 25 cm because the power of accommodation of the eye is exhausted. When the maximum accommodation of eye is reached, the ciliary muscles of eye lens cannot become thicker.

Q2. Make a diagram to show how hypermetropia is corrected. The near point of a hypermetropia eye is 1 m. What is the power of the lens required to correct this defect? Assume that the near point of human eye with normal eye is 25 cm.

(next pg).

Q2. Hypermetropia can be corrected by using a convex lens. A convex lens converges the incoming light such that the image is formed on the retina. An object at 25cm forms an image at the near point of hypometropic eye. Here, near point is 1m.

object dist,  $u = -25\text{cm}$ .

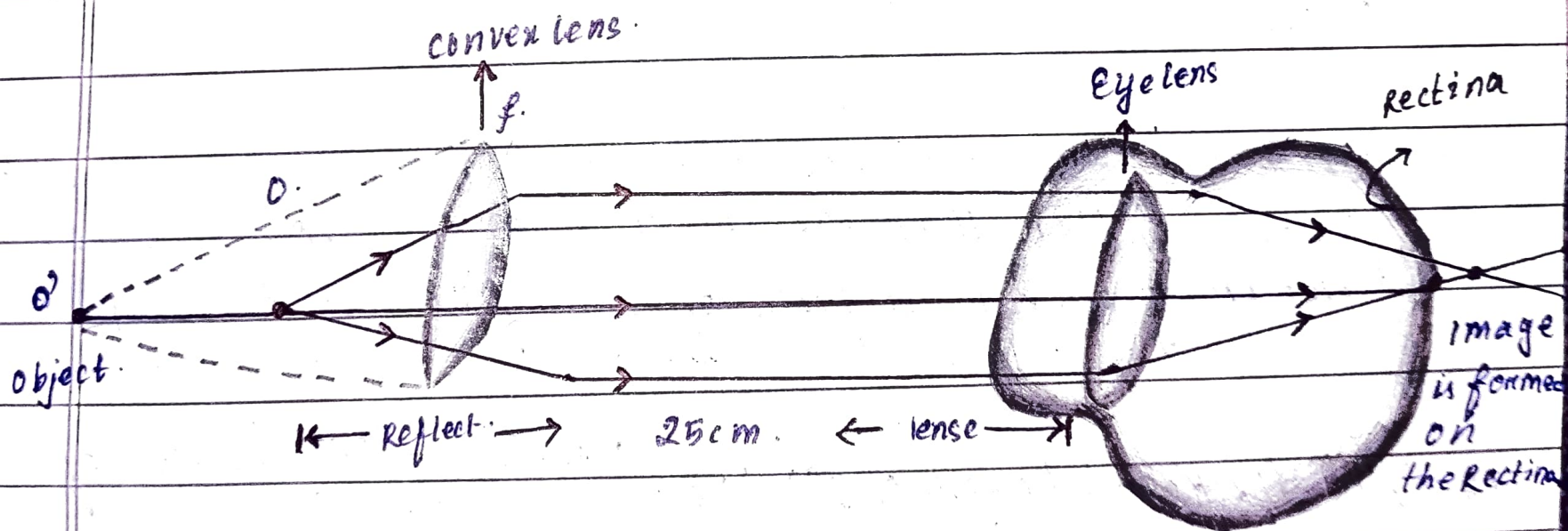
image dist.  $v = -100\text{cm}$ .

Q2. from lens formula,  $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$

$$\frac{1}{-100} - \frac{1}{-25} = \frac{1}{f}$$

focal length,  $f = 100/3 \text{ cm} = 1/3 \text{ m}$ .

$$\text{Power, } P = \frac{1}{f} = \frac{1}{1/3} = 3 \text{ D}$$



Q3 - What is the far point & near point of human eye with normal vision?

A → Far point of the human eye with normal vision is infinity.  
Near point of the human eye with normal vision is 25 cm.

Q4. A student has difficulty reading the blackboard while sitting in the last row. What could be the defect the child is suffering from? How can it be corrected?

A → The defect is myopia that causes distance objects to appear blurred, while close objects can be seen clearly. Myopia is corrected by using a concave lens which is placed in front of a myopic eye, moving the image back to the retina & making it clear.