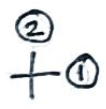
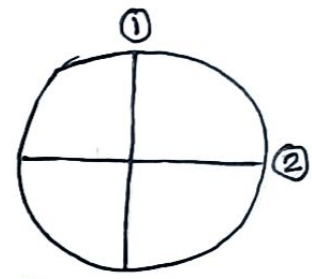
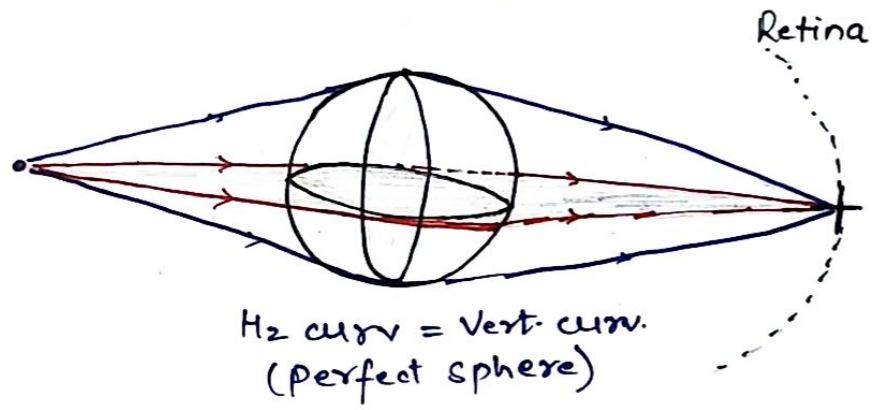
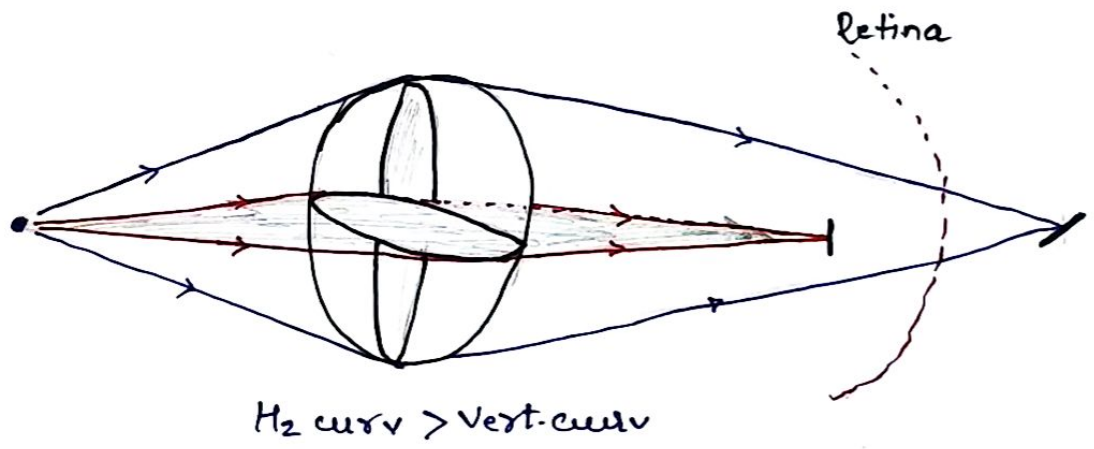


ASTIGMATISM

#1:- Visual image in one plane focus at different distance from that of plane at right angle.

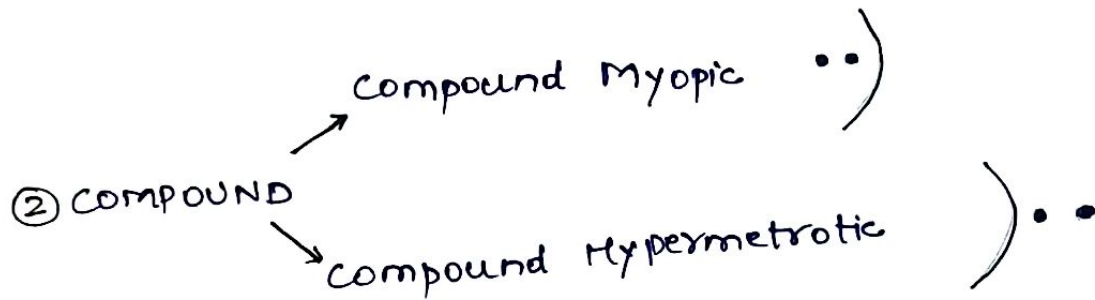
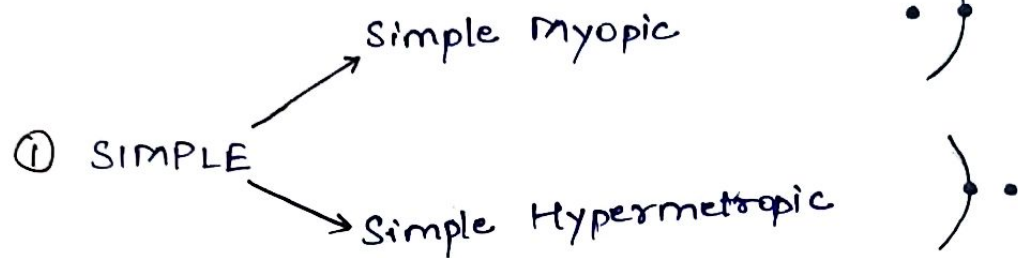


[curv & converging power]



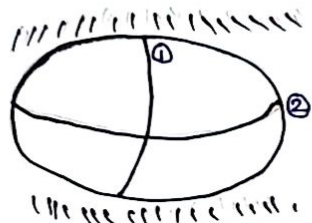
⇒ Astigmatism

#2:- Types of Astigmatism



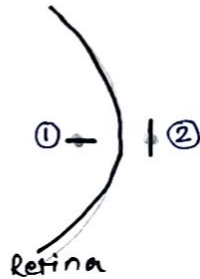
- * WTR (With The Rule) Astigmatism
- * ATR (Against The Rule) Astigmatism

Physiologically by nature ;



vert curv $>$ Hz curv.

[D/t pressure of eyelid]



WTR Astigmatism :-

focal line d/t vertical plane
is nearer than focal line
d/t Hz. plane.

ATR astigmatism :-

focal line d/t Hz plane is nearer
than focal line d/t vertical plane.

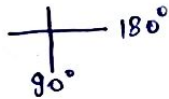
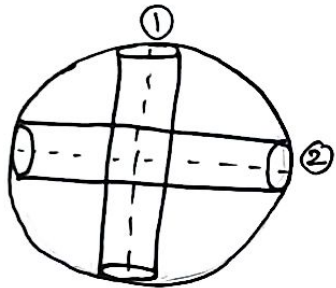
Correction of Astigmatism :-

A spherical lens \rightarrow corrects 1 focus
then

A cylindrical lens \rightarrow corrects 2nd focus

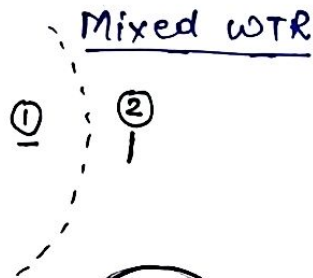
Axis
Strength

Eg:-

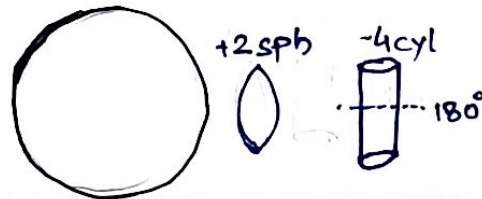
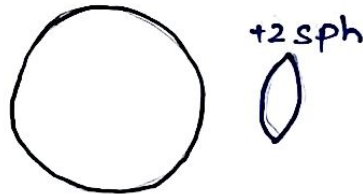


+2 sph -4cyl @ 180°

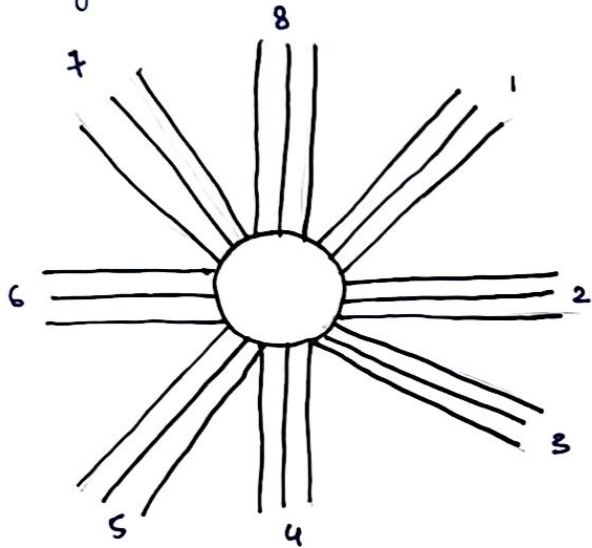
Strength Axis



Correction



Using :- Parallel Black Bars



Used to determine the axis of cylindrical lens.

Eg:- After using spherical lens;

- 4, 8 ✓
- 6, 2 fuzzy
- others ✓

Use cylindrical lens of 90° that axis

- 4, 8 ✓
- 6, 2 ✓
- others ✓