Oblique Astigmatism and Red Reflex

✓ **Oblique astigmatism is diagnosed if the principal meridians are not at 90˚ or 180˚. meridians lying between 30˚– 60˚ and 120˚–150˚ (i.e., they are perpendicular to each other).**

✓ **As you move the streak from side to side, the reflex will appear to move obliquely (Figure 1).**

✓ **Rotate the beam until it is parallel with the reflex motion. Neutralize the "with" or "against movement" you see here.**

✓ **Don't forget to subtract your working distance before writing the prescription. Congratulations, you are finished with retinoscopy**

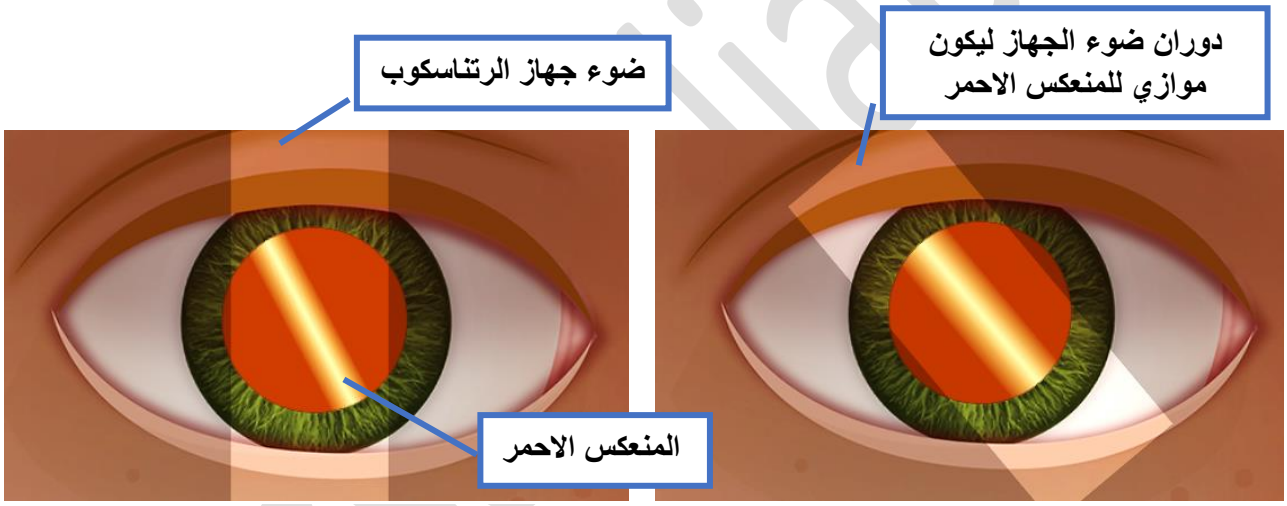
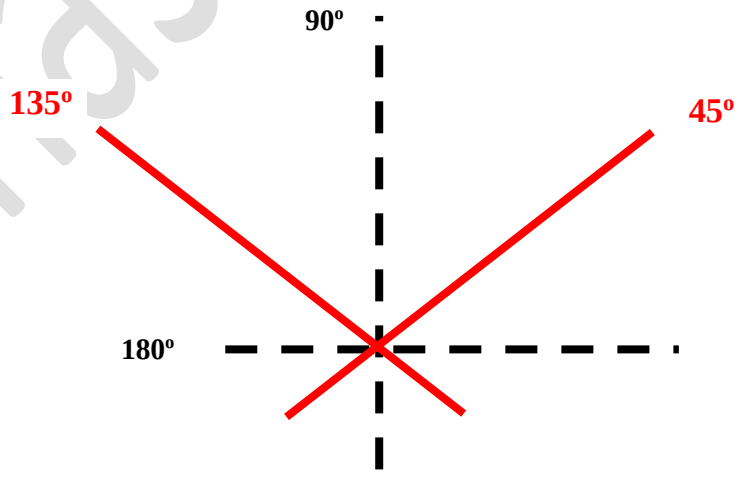


Figure 1. Orientation of streak in oblique astigmatic eye



Example

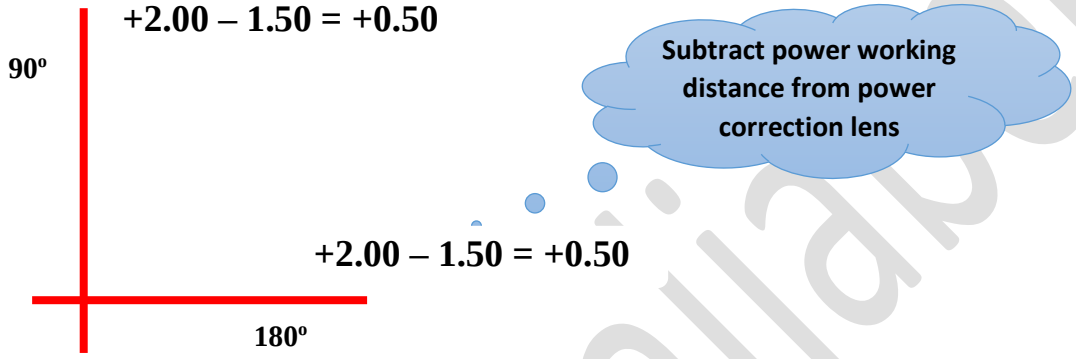
When we examine the patient's eye using a retinoscope with a working distance of 67 cm, will appear as follow:

Case 1

red reflex is moving in same direction light retinoscope ((**with motion**)).

So, we need to add **plus lens**, suppose that lens **+2.00** , will appear there is no motion, i.e. the red reflex is **neutral** in horizontal and vertical axes.

The prescription will write as below:



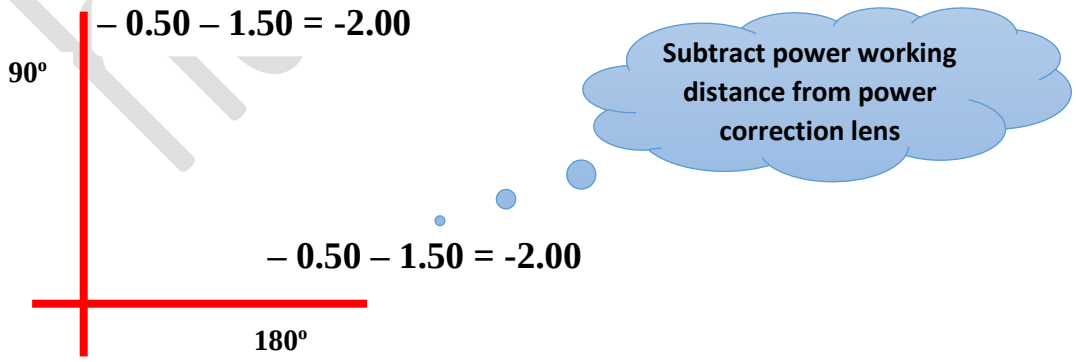
The patient has hyperopic and the power of his spectacle is +0.50 DS

Case 2

red reflex is moving in opposite direction light retinoscope ((**against motion**)).

So, we need to add **minus lens**, suppose that lens **-0.50** , will appear there is no motion, i.e. the red reflex is **neutral** in horizontal and vertical axes.

The prescription will write as below:

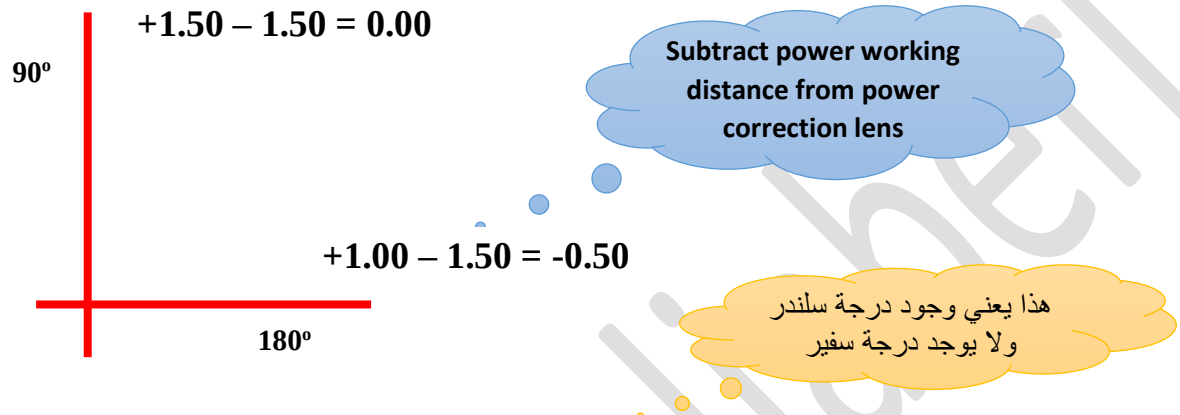


The patient has myopia and the power of his spectacle is -2.00 DS

Case 3

- red reflex is moving in same direction light retinoscope ((**with motion**)) around **horizontal** axis . So, we need to add **plus lens**, suppose that lens **+1.00** , will appear there is no motion, i.e. the red reflex is **neutral**
- red reflex is moving in same direction light retinoscope ((**with motion**)) around **vertical** axis . So, we need to add **plus lens**, suppose that lens **+1.50** , will appear there is no motion, i.e. the red reflex is **neutral**

The prescription will write as below:

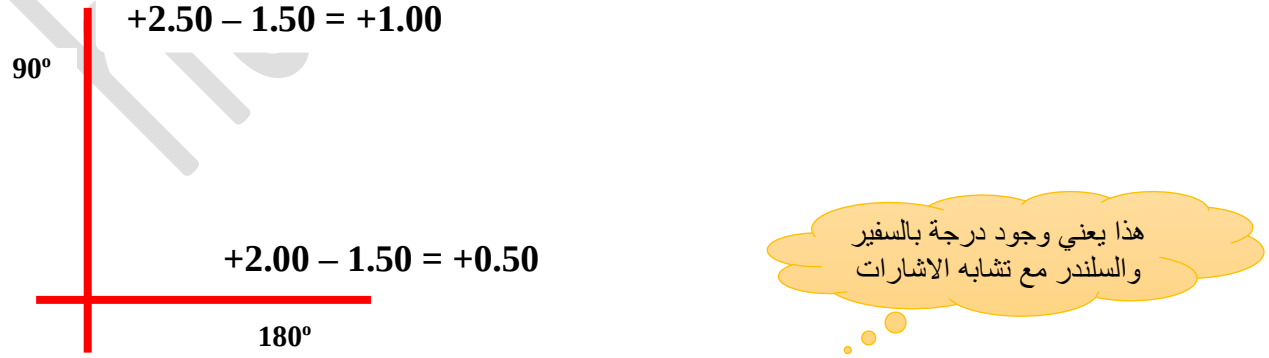


The patient has simple myopic astigmatism
0.00 DS / -0.50 DC X 90

Case 4

- red reflex is moving in same direction light retinoscope ((**with motion**)) around **horizontal** axis . So, we need to add **plus lens**, suppose that lens **+2.00** , will appear there is no motion, i.e. the red reflex is **neutral**
- red reflex is moving in same direction light retinoscope ((**with motion**)) around **vertical** axis . So, we need to add **plus lens**, suppose that lens **+2.50** , will appear there is no motion, i.e. the red reflex is **neutral**

The prescription will write as below:

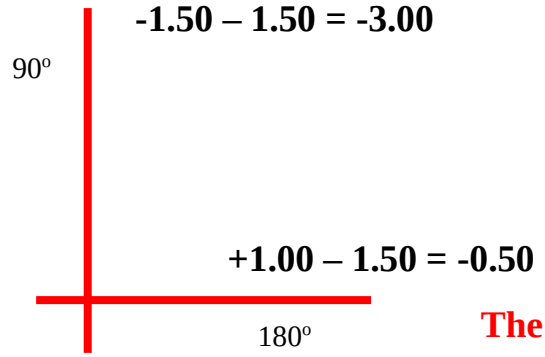


The patient has compound hyperopic astigmatism
+0.50 DS / +0.50 DC X 180

Case 5

- red reflex is moving in opposite direction light retinoscope ((**against motion**)) around **horizontal** axis . So, we need to add **minus lens**, suppose that lens **-1.50** , will appear there is no motion, i.e. the red reflex is **neutral**
- red reflex is moving in same direction light retinoscope ((**with motion**)) around **vertical** axis . So, we need to add **plus lens**, suppose that lens **+1.00** , will appear there is no motion, i.e. the red reflex is **neutral**

The prescription will write as below:



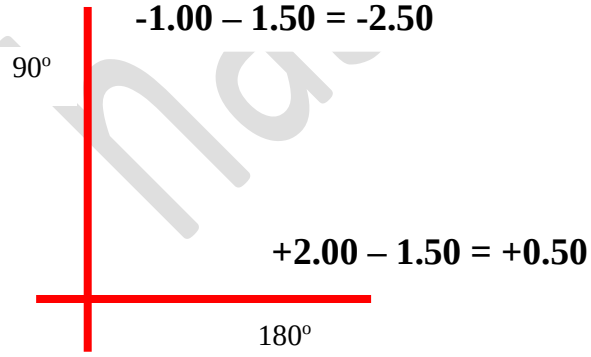
The patient has compound myopic astigmatism

-0.50 DS / -2.50 DC X 180

Case 6

- red reflex is moving in opposite direction light retinoscope ((**against motion**)) around **horizontal** axis . So, we need to add **minus lens**, suppose that lens **-1.00** , will appear there is no motion, i.e. the red reflex is **neutral**
- red reflex is moving in same direction light retinoscope ((**with motion**)) around **vertical** axis . So, we need to add **plus lens**, suppose that lens **+2.00** , will appear there is no motion, i.e. the red reflex is **neutral**

The prescription will write as below:



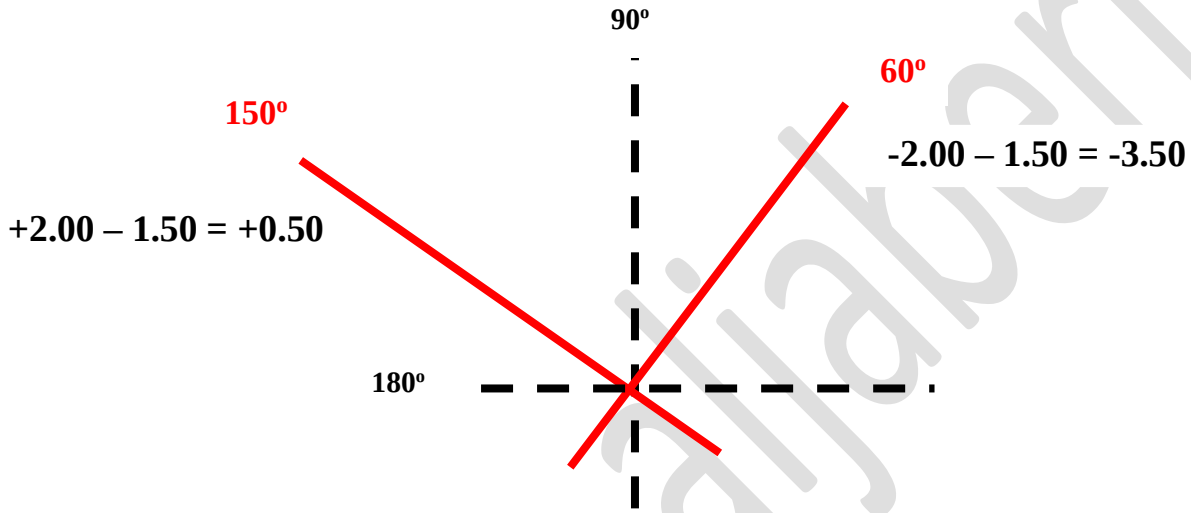
The patient has mixed astigmatism

+0.50 DS / -3.00 DC X 180

Case 6

- red reflex is moving in opposite direction light retinoscope ((**against motion**)) with **oblique** axis about 60 º . So, we need to add **minus lens**, suppose that lens **-2.00** , will appear there is no motion, i.e. the red reflex is **neutral**
- red reflex is moving in same direction light retinoscope ((**with motion**)) with **perpendicular** axis about 150 º . So, we need to add **plus lens**, suppose that lens **+2.00** , will appear there is no motion, i.e. the red reflex is **neutral**

The prescription will write as below:



The patient has mixed astigmatism

+0.50 DS / -4.00 DC X 150 .

هذا يعني وجود استكماتيزم
وبمحور مائل

جامعة المستقبل
AL MUSTAQBAL UNIVERSITY