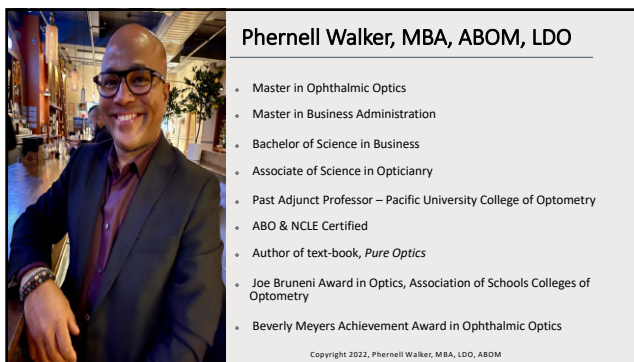
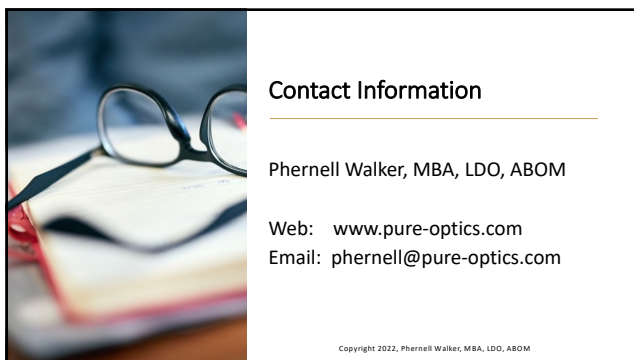


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3



Problem Solving Goals

- Improved patient satisfaction
- Mitigate re-do's unnecessary chair-time

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FORMULA FOR SUCCESS

Using the HPP for Problems

- Chief Complaint
- Onset
- Location
- Severity
- Duration
- Modifying Factors

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Mind Reader

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Make Time

- Schedule Rx check as a regular appointment
- Be positive, concerned, apologetic
- Sit down, listen
- Have patient bring their old glasses
- Consider over refraction

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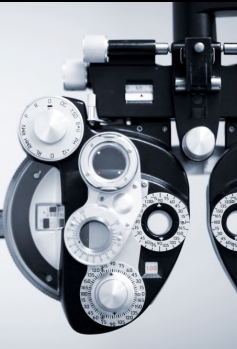


Quantitative Data

- Confirm Rx with lensometer
- Mark optical centers with lensometer
- Measure base curves with lens clock
- Measure patient's Monocular PD
- Measure VA at distance and near

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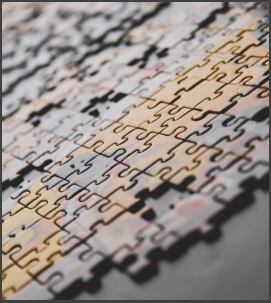


Refraction Issues

- Poor refraction
 - Changing distance changes add power
 - 50/50/15 rule
 - Poor binocular balancing
- Poor handwriting, transcription error
- Diabetic with fluctuating blood sugar
- Contact lens wearer with corneal edema
- Unrealistic expectations

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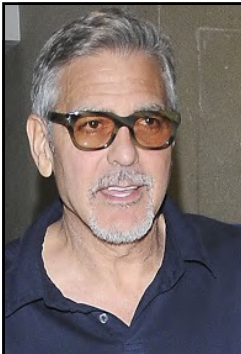


Common Issues

- Glasses not made to Rx
- Undetected convergence insufficiency
- Change in lens material
- Change in vertex distance
- Poor glasses fit
- Change in vision since the refraction

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Case: Mr. Clooney

- Age: 59
- OD: -2.50 -0.50 x 085
- OS: -2.25 -0.75 x 090 Add +2.00 OU
- PD: 30/32 | Vertex 12mm | Pantoscopic 14
- CC: Horizontal objects appear slanted
- Onset: New glasses
- Severity: 5
- Duration: Constant
- Modifying Factors: None

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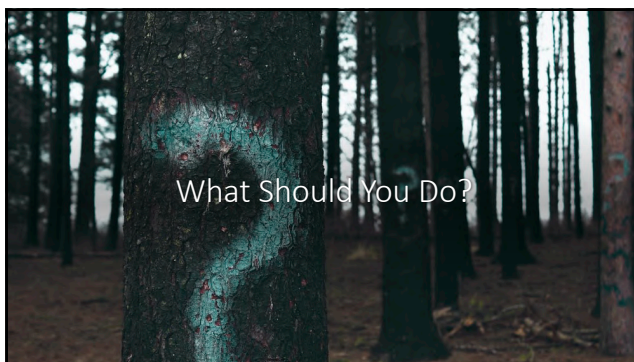


Mr. Clooney's Back Yard View Before Glasses

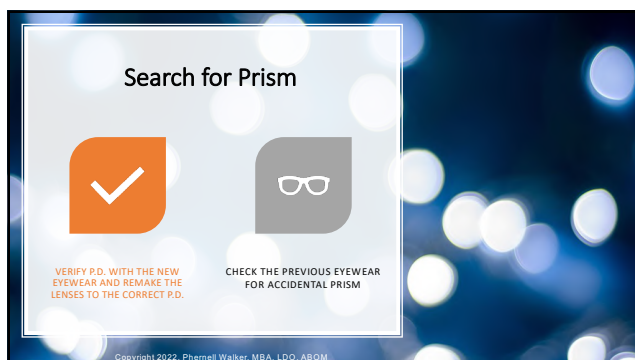
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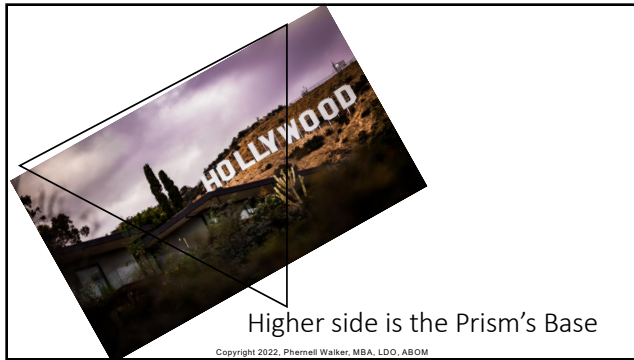
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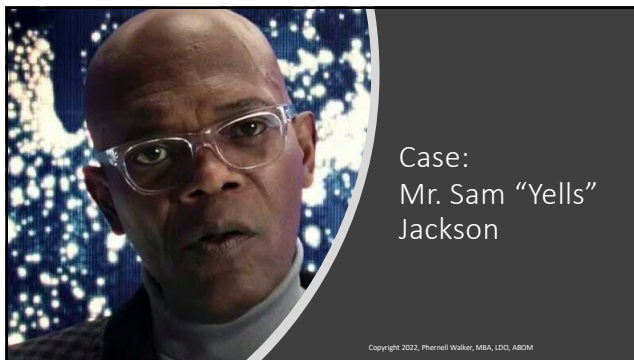
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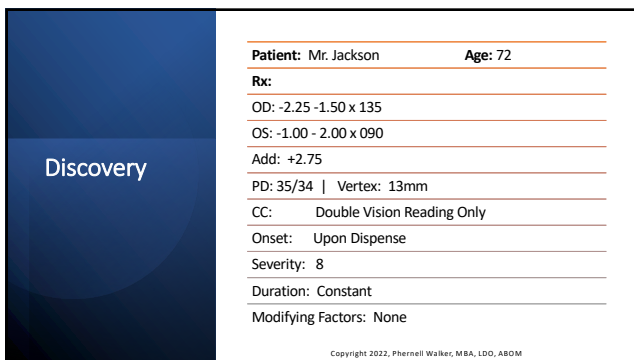
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20

Slab-off | Bicentric Grinding

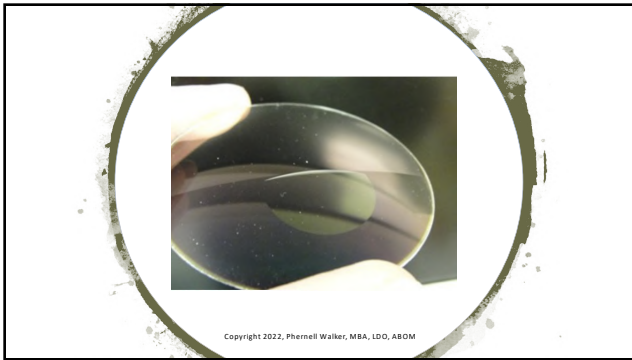
Slab-off - the use of prism in the reading portion of a lens to balance unequal prism in the 090th meridian between the OD and OS lenses.

Slab-off Methods:

- Traditional Slab-off
- Reverse Slab-off

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Traditional Slab-off

Imbalance =	> 1.50 D x 090 th Meridian
Lens Selection =	Weakest Plus Power
Lens Selection =	Stronger Minus Power
Ground (Surfaced) =	Base Up Prism x 090 th Meridian

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Reverse Slab-off

Imbalance =	> 1.50 D x 090 th Meridian
Lens Selection =	Strongest Plus Power
Lens Selection =	Weaker Minus Power
Ground (Surfaced) =	Base Down Prism x 090 th Meridian

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Solution Mr. Jackson

How much slab-off should you prescribe?

OD: -2.25 -1.50 x 135

OS: -1.00 - 2.00 x 090 Add: +2.50 OU

Ft. 28

PD: 35/34

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Slab-off Made Easy

Calculate the dioptric power in the 090th meridian of each lens

$De = S + [C (\sin a)^2]$

Calculate the amount of prism 10 mm (reading level - FT 28) or 8 mm (reading level - FT 35) below the distance optical center per lens

$P = (1 \text{ cm}) (De)$

The dioptric difference between each lens is the amount of prism required

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Calculate Slab-off Ft. 28

- Calculate the dioptric power in the 090th meridian of each lens
- Calculate the amount of prism use 1 cm (10 mm)
- The dioptric difference between each lens is the amount of prism required

OD: -2.25 -1.50 x 135
OS: -1.00 - 2.00 x 090
Add: +2.50, Ft. 28
OD: -3.00 | OS: -1.00
(3) (1.0) | (1) (1.0)
OD: 3D | OS: 1D
 $3 - 1 = 2$
OD = 2 Diopters, BU

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Calculate Slab-off Ft. 35

- ▮ Calculate the dioptric power in the 090th meridian of each lens
- ▮ Calculate the amount of prism use .8 cm (8 mm)
- ▮ The dioptric difference between each lens is the amount of prism required

OD: -2.25 -1.50 x 135
OS: -1.00 - 2.00 x 090
Add: +2.50, Ft. 35

OD: -3.00 | OS: -1.00

(3) (.8) | (1) (.8)


OD: 2.40 D | OS: 0.80 D

$2.40 - 0.80 = 1.60$

OD = 1.60 Diopters, BU

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Case: Reba Mcentire

Patient: Reba Mcentire | **Age:** 66

OD: -4.75 D.S.
OS: -5.00 D.S.
Add: +2.25

PD: 29/30 | Vertex: 15mm

CC: headache, sore nose

Location: behind right ear, and left side of nose

Onset: 1 week

Severity: 7

Duration: constant

Modifying Factors: none

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Also Known as the KFC Colonel



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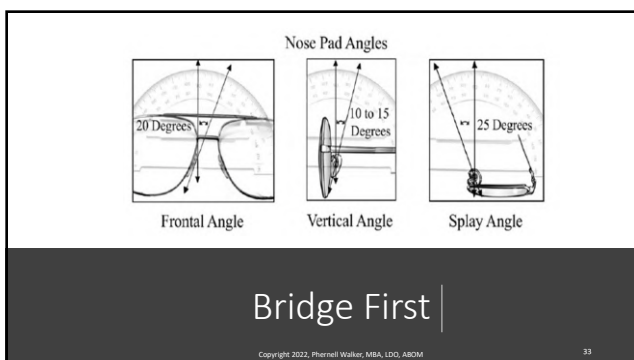
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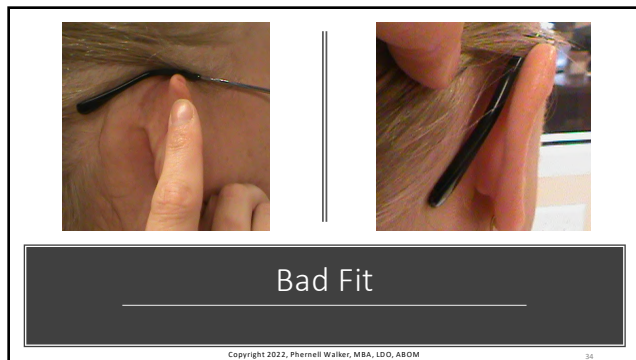
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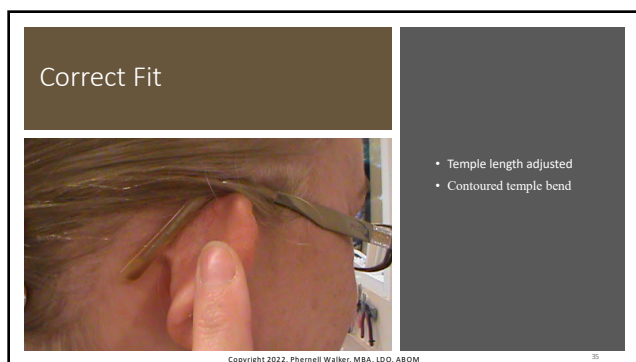
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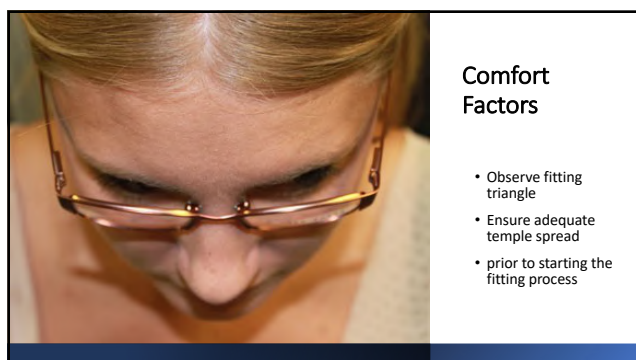
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Comfort Factors

 Temple bend placement

 Mastoid alignment

 Temple length

 Avoid bowing

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Case: Mark Sinclair
(Vin Deisel)
He's No Bus Driver

Age: 53

OD: -1.75 D.S.

OS: -1.50 D.S. | Add: +1.50 OU

PD: 29/30 | Vertex: 15mm

CC: Better Vision w/ clear vs. sunwear

Onset: 2-Weeks


Severity: 6

Duration: Constant

Modifying Factors: None

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What Should You Do?

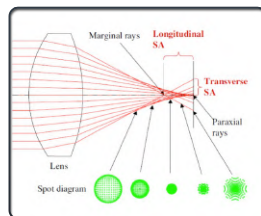
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Glasses are Made to Order

- ✓Sphere / Cylinder / Axis
- ✓Monocular PD
- ✓OC
- ✓Lens Density #3|C
- ✓High Index 1.67n

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Spherical Aberration

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Spherical Aberration

Pupils eliminates spherical aberration

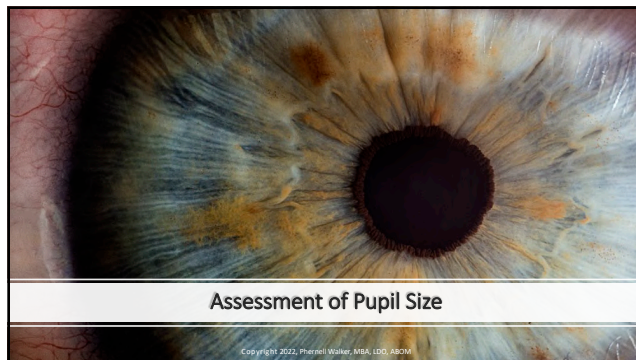
Normal lighting allow for a 3mm to 5mm in pupil diameter

Dark lenses cause the pupils to dilate

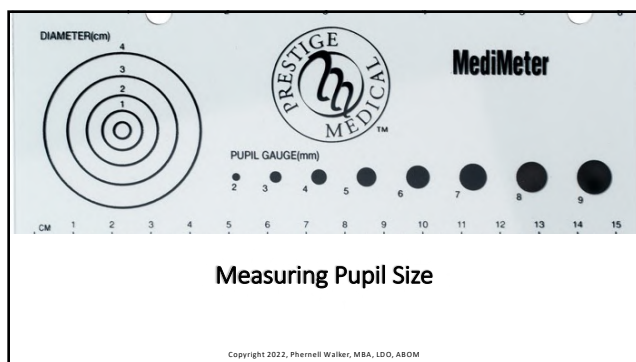
Increased pupil size increases spherical spherical aberration

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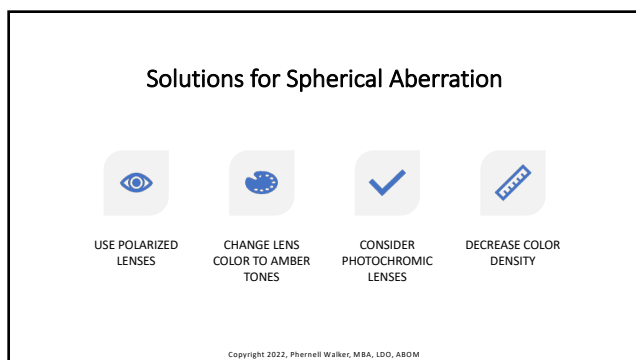
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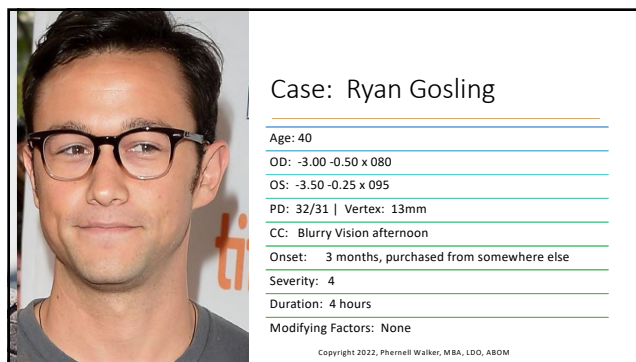
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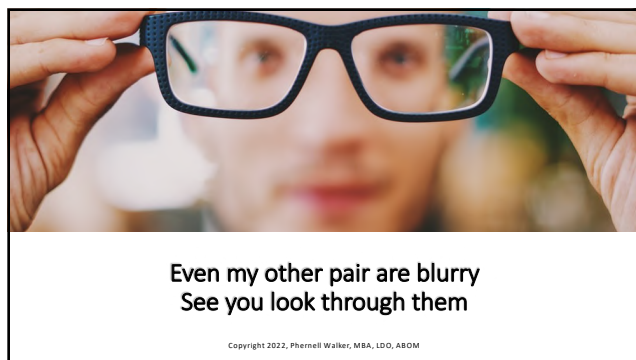
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Blurry Vision in Afternoon

Morning Rx:
OD: -3.00 -0.50 x 080
OS: -3.50 -0.25 x 095

Afternoon Rx:
OD: -3.75 -0.50 x 080
OS: -4.00 -0.25 x 095

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Diabetes Type II



A1C (aka: HbA1C) - measures amount of hemoglobin blood sugar over a time period of 2 to 3 months.

Blood Sugar - monitoring blood sugar is essential.

- Blood sugar values show how well your diabetes is managed
- Target range:
 - Before meals: 80 to 130
 - Two hours after the start of a meal: < 180

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Threats to Diabetic Eye Health

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Binocular Indirect Ophthalmoscopy





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Fundus Photography


- ☐ Color
- ☐ Red-free
- ☐ Choroidal
- ☐ Autofluorescence
- ☐ Fluorescein angiography



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Assessment

- ☐ Blood vessel damage
- ☐ Leaky blood vessels
- ☐ Blood vessel closure
- ☐ Hard exudates
- ☐ 80% of patient w/DM more than 10 yrs. will get DR




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CC:	Blurry Vision
Location:	Distance Vision
Onset:	New Contacts
Severity:	6
Duration:	Constant
Mod. Fac:	None

Blurry Vision with New Soft Toric Contacts

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Soft Toric Contact Lenses

Presenting Rx	SCOR
- Cyl: -8.50 -2.00 x 180	- CYL: -0.50 -0.75 x 140
+Cyl: -10.50+2.00 x 090	+ Cyl: -1.25 +0.75 x 050

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Combining
Cylinders

$$C^2 = C_1^2 + C_2^2 + 2C_1 C_2 \cos 2y$$

$$S = (S_1 + S_2 + C_1 + C_2 - C) / 2$$

$$\tan / 2 = C_2 \sin 2y / C_1 + C_2 \cos 2y$$

- Lower Axis Rx = $S_1 C_1 \times a_1$
- Higher Axis Rx = $S_2 C_2 \times a_2$
- $y = a_2 - a_1$

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Calculate New
Cylinder

$$C^2 = C_1^2 + C_2^2 + 2C_1 C_2 \cos 2y$$

$$C^2 = 0.75^2 + 2^2 + 2(0.75)(2) \cos 2(40)$$

$$C^2 = 0.5625 + 4 + 1.50(2) \cos 80$$

$$C^2 = 0.5625 + 4 + 3(0.17)$$

$$C^2 = \sqrt{5.07}$$

$$C = +2.25 \text{ *plus cylinder format}$$

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Calculate New
Sphere

$$S = (S_1 + S_2) + (C_1 + C_2 - C) / 2$$

$$S = (-10.50 + -1.25) + (0.75 + 2.00 - 2.25) / 2$$

$$S = -11.75 + -0.50 / 2$$

$$S = -11.75 + -0.25$$

$$S = -11.50 \text{ *plus cylinder format}$$

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Calculate New Axis

$$^{-1}\tan /2 = C_2 \sin 2y / C_1 + C_2 \cos 2y$$

$$^{-1}\tan /2 = 2.25 \sin 80 / 0.75 + 2 \cos 80$$

$$^{-1}\tan /2 = 2.21 / 1.10$$

$$^{-1}\tan /2 = 2.01$$

$$^{-1}\tan /2 = 64$$

Axis = 31.77 degrees of change

Add 32 degrees to a₁ (**32 + 50 = 081**)

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Corrected Soft Toric Contacts

Presenting Rx	CORRECTED RX
+ CYL: -10.50 +2.00 x 090	+ CYL: -11.50 +2.25 x 081
- CYL: -8.50 -2.00 x 180	- CYL: -9.25 -2.25 x 171

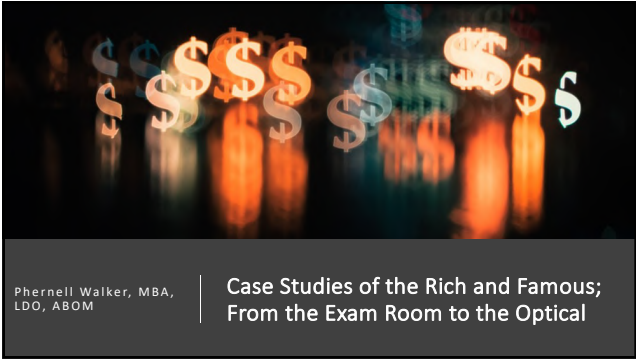
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Questions

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