

Answers on presentation

- Some of the answers in this presentation are intentionally incorrect, so be prepared to defend your answers...

Transposition and Conversion

Lynn E. Lawrence, CPOT, COA, ABOC, OSC

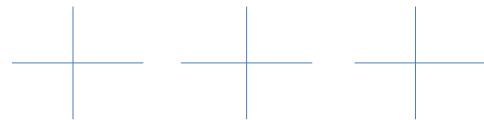
Purpose

- Why is the math necessary?
- When is the math going to be used?
- Does this alter the patients SRx

Create a number line



Insert 3 hash marks between every number



Determining cylinder power

- Two questions should be asked to determine the cylinder power:
 1. In what direction on the number line is travel occurring (on the number line) from the sphere to the cylinder (either in the negative direction or in the positive direction)?
 2. What is the distance traveled from the sphere to the cylinder power (the amount of cylinder present in the prescription)?

Prescriptions: Transposition

• Transposition

- Step 1 = Combine the sphere and cylinder power mathematically
- Step 2 = Change the sign of the cylinder
- Step 3 = Change the axis by 90 degrees

Hint: When combining positive and negative numbers, think in terms of money. Example: -2.00 combined with +0.50 If you are \$2.00 "in the hole" and you deposit \$0.50, what is your balance?

Answer: \$1.50 "in the hole", or -1.50.

Transposition

- Combine the sphere and cylinder power algebraically/mathematically
- Keep and change the sign of the cylinder
- Change the axis by 90 degrees
- EX: $+2.00 + 1.00 \times 080$
 $+3.00 - 1.00 \times 170$

The purpose of transposition is to change the same prescription into a different form.

Transposition 1 Minute Drill

- Step 1 = Combine the sphere and cylinder power mathematically
 - Step 2 = Change the sign of the cylinder
 - Step 3 = Change the axis by 90 degrees
1. $+ 1.75 - 0.75 \times 030$
 2. $- 2.25 + 1.00 \times 170$
 3. $- 1.75 + 2.00 \times 125$

Review Questions 1 minute drill

- Transpose the following Rx from *plus cylinder form to minus cylinder form*
- $-2.00 + 1.00 \times 090$
 Answer _____
- $-1.00 + 3.00 \times 070$
 Answer _____
- $-1.00 + 1.50 \times 010$
 Answer _____
- $-0.50 + 2.00 \times 145$
 Answer _____
- $-3.00 + 2.00 \times 095$
 Answer _____

Transposition 1 Minute Drill

- Step 1 = Combine the sphere and cylinder power mathematically
 - Step 2 = Change the sign of the cylinder
 - Step 3 = Change the axis by 90 degrees
1. $+ 1.75 - 0.75 \times 030$
 2. $- 2.25 + 1.00 \times 170$
 3. $- 1.75 + 2.00 \times 125$

Review Questions 1 minute drill

- Convert the following prescription from *minus cylinder to plus cylinder* format
- $-1.00 - 1.00 \times 090$
 Answer _____
- $-0.50 - 2.00 \times 008$
 Answer _____
- $-1.00 - 1.50 \times 160$
 Answer _____
- $-5.00 - 3.00 \times 088$
 Answer _____
- $-3.00 - 1.50 \times 095$
 Answer _____

Review Questions 3 minutes

- | | |
|---|---|
| • $-2.00 - 1.00 \times 002$ transpose
Answer _____ | • $-2.50 + 1.50 \times 103$ transpose
Answer _____ |
| • $-3.50 - 2.00 \times 080$ transpose
Answer _____ | • $-1.00 + 0.50 \times 162$ transpose
Answer _____ |
| • $-3.00 - 2.50 \times 016$ transpose
Answer _____ | • $+2.50 + 2.50 \times 103$ transpose
Answer _____ |
| • $-3.00 - 2.00 \times 088$ transpose
Answer _____ | • $-2.50 + 1.00 \times 029$ transpose
Answer _____ |
| • $-2.00 - 2.50 \times 005$ transpose
Answer _____ | |

Spherical Equivalent

- Take half the cylinder and add algebraically to sphere
- Drop the cylinder and axis and write sphere only

EX. -2.00 -0.50 X 145
 (half the cylinder) -0.25
 (add to sphere) 0.25 + 2.00
Answer:
 -2.25 Sph

Convert to IV + NV Rx

- Step 1 $-2.50 - 1.25 \times 125$
- Take the $\frac{1}{2}$ the add power and algebraically add it the sphere power of the Rx $-1.50 - 1.00 \times 095$
Add +2.50
- Rewrite the Rx with $\frac{1}{2}$ the add power remaining in Rx (used for reading) $-4.50 - 2.50 \times 005$
 $-1.50 - 1.00 \times 150$
Add +2.00

* Used with computers or intermediate work

Question

Transpose the following Rx to Near Vision Only
 aka NVO, SVN, reading glasses

-2.00 -1.00 x 080
 -1.50 -2.00 x 180
 +3.00 OU

Answer _____

Question

Transpose the following Rx to Near Vision Only
 aka NVO, SVN, reading glasses

-1.00 -0.50 x 010
 -2.00 -0.75 x 100
 +1.50 OU

Answer _____

Question

Transpose the following Rx to Near Vision Only
 aka NVO, SVN, reading glasses

-4.00 -0.25 x 090
 -1.00 -0.50 x 098
 +2.00 OU

Answer _____

Question

Transpose the following Rx to Near Vision Only
 aka NVO, SVN, reading glasses

+2.50 -1.00 x 090
 +1.00 -0.75 x 180
 +2.50 OU

Answer _____

Question

Convert to spherical equivalent

- 1.50 – 1.00 X 180

- 2.25 – 1.50 X 120

Answer _____

+ 2.50 – 2.00 X 018

+ 2.25 – 3.50 X 010

Answer _____

Review Questions

- Convert the following Rx to **Near Vision Only** aka NVO, SVN, reading glasses

- 2.00 -1.00 x 080

- 1.50 -2.00 x 180

- +3.00 OU

- Answer _____

- .

- 1.00 – 0.50 x 010

- 2.00 -0.75 x 100

- +1.25 OU

- Answer _____

- .

- .

- 4.00 -0.25 x 090

- 1.00 -0.50 x 098

- +2.00 OU

- Answer _____

- .

- +2.50 -1.00 x 090

- +1.00 -0.75 x 180

- +2.25 OU

- Answer _____

Review Questions 1 minute drill

- Transpose the following Rx from **plus cylinder form to minus cylinder form**

- 1.00 +1.00 x 040

- Answer _____

- 2.00 +3.00 x 170

- Answer _____

- .

- 4.00 +1.50 x 100

- Answer _____

- 1.50 +2.00 x 015

- Answer _____

- 3.00 +2.00 x 095

- Answer _____

Review Questions 1 minute drill

- Convert the following prescription from **minus cylinder to plus cylinder** format

- 1.00 -1.00 x 090

- Answer _____

- 0.50 -2.00 x 008

- Answer _____

- 1.00 -1.50 x 160

- Answer _____

- 5.00 -3.00 x 088

- Answer _____

- 3.00 -1.50 x 095

- Answer _____

Convert to SVN or Near Rx only 1 min drill

- + 3.25 – 0.75 X 125

- + 1.75 – 1.00 X 090

- Add 2.50

- 4.50 – 1.50 X 035

- 1.75 – 1.00 X 150

- Add 2.00

- Step 1

- Add the add power to the sphere power and write it as the new sphere power

- Step 2

- Write the new complete Rx Sph, Cyl, and Axis

Review Questions

- Convert the following Rx to **Near Vision Only** aka NVO, SVN, reading glasses

- 2.00 -1.00 x 080

- 1.50 -2.00 x 180

- +3.00 OU

- Answer _____

- .

- 1.00 – 0.50 x 010

- 2.00 -0.75 x 100

- +1.25 OU

- Answer _____

- .

- .

- 4.00 -0.25 x 090

- 1.00 -0.50 x 098

- +2.00 OU

- Answer _____

- .

- +2.50 -1.00 x 090

- +1.00 -0.75 x 180

- +2.25 OU

- Answer _____

- .

martralyn@msn.com

<http://lynnslecturehelp.wordpress.com>

Thank you very much