

$$\text{Sin}(hc) = [\text{Cos}(D-L) - \text{Cos}(D+L)]/2 + [\text{Cos}(S) + \text{Cos}(S-2D) + \text{Cos}(S-2L) + \text{Cos}(S-2t)]/4 \quad (S \text{ def. as } D+L+t)$$



1.	D: <input type="text"/>	in arc min	D: <input type="text"/>
			2D: <input type="text"/>
	L: <input type="text"/>	in arc min	L: <input type="text"/>
			2L: <input type="text"/>
t: <input type="text"/>	in arc min	t: <input type="text"/>	
			2t: <input type="text"/>

1. t : - 180° to +180°.
2. Transform angles to arc min .
3. Negative angles may not necessarily be wrong!
4. Value, sign of cos()? See Adjustment below.
- 5: Use the algebraic sign rules !!

CellNavTest prostphaeresis.pdf, ods

2.	D		D		(D+L)	
	-L		+L		+t	
A = (D-L) orig :	<input type="text"/>	A = (D+L) orig :	<input type="text"/>	S: A=(D+L+t) orig :	<input type="text"/>	
Rule :	#	Rule :	#	Rule :	#	
Sign of cos :	<input type="radio"/>	Sign of cos :	<input type="radio"/>	Sign of cos :	<input type="radio"/>	
B = (D-L) adj :	<input type="text"/>	B = (D+L) adj :	<input type="text"/>	B = (D+L+t) adj :	<input type="text"/>	
cos(D-L) :	<input type="radio"/>	cos(D+L) :	<input type="radio"/>	cos(S) :	<input type="radio"/>	

	S		S		S	
	-2D		-2L		-2t	
A = (S-2D) orig :	<input type="text"/>	A = (S-2L) orig :	<input type="text"/>	A = (S-2t) orig :	<input type="text"/>	
Rule :	#	Rule :	#	Rule :	#	
Sign of cos :	<input type="radio"/>	Sign of cos :	<input type="radio"/>	Sign of cos :	<input type="radio"/>	
B = (S-2D) adj :	<input type="text"/>	B = (S-2L) adj :	<input type="text"/>	B = (S-2t) adj :	<input type="text"/>	
cos(S-2D) :	<input type="radio"/>	cos(S-2L) :	<input type="radio"/>	cos(S-2t) :	<input type="radio"/>	

3.

Put pos values under 'if pos'
Put neg values under 'if neg'.
Total both.
Put the neg. total under the pos. total.
Subtract.

cos(S)	if pos	if neg
cos(S-2D)	if pos	if neg
cos(S-2L)	if pos	if neg
cos(S-2t)	if pos	if neg

\star 1/4: Q =

COS(D-L)	<input type="text"/>	Q	<input type="text"/>
COS(D+L)	<input type="text"/>	P	<input type="text"/>
\star 1/2: P =	<input type="text"/>	Q+P :	<input type="text"/>

hc in amin :

Final calculation to find hc :

Ex: Assume Q+P contains 2345 .

- find 2345 in cos() - column.
- in cell left of 2345 find 4586'.
- enter 4586' into field under 5400'.
- subtraction yields hc in amin.

7/25/2013

For correct cos() value adjust sign and angle:

Rule # 1 :	Rule # 2 :	Rule # 3 :	Rule # 4 :	Rule # 5 :	Rule # 6 :
A < 0 ← 0	0 ↔ 5,400'	5,400' ↔ 10,800'	10,800' ↔ 16,200'	16,200' ↔ 21,600'	21,600' → A > 21,600'
A = - A repeat	B = A cos : +	B = 10,800' - A cos : -	B = A - 10,800' cos : -	B = 21,600' - A cos : +	B = B - 21,600' repeat
Example: A = - 12,345': Result: A = + 12,345' repeat	A = 2345': B = 2345' cos : + 8066	A = 8455': B = 10,800' - 8455' B = 2345' cos : - 8066	A = 13,145': B = 13,145' - 10,800' = 2345' cos : - 8066	A = 19,255': B = 21,600' - 19,455' = 2345' cos : + 8066	A = 34,567': B = 34,567' - 21,600' = 2967' repeat

