Sight Reduction

Position from GPS Test app on phone

		°	'	°	'	"
Lat	S	41	6.4638	41	6	28
Long	E	175	5.2121	175	5	13

Pseudo Sight using Sun Facts app on phone

Time by PC	14:29:30	15/06/16	NZST
	02:29:30	15/06/16	GMT

From Sun Facts App:	**Alt**	**Azimuth**	**RA**	**Dec**
	18.9	328.7	83.9	23.3
	18° 54'			

Note: GHA & Dec will be extracted from almanac and Hc and Z calculated

From 2016 Aeronautical Almanac:

		GHA	**DEC**
15/06/16	02:20:00	214° 52.6'	N23° 19.0'
Increment	00:09:30	2° 23'	
		217° 15.6'	

Long East LHA = GHA + Long (-360 if necessary)
Long West LHA = GHA – Long (+360 if necessary)

AP 3270

Select assumed longitude to make LHA a whole degree.

Assumed long		174° 44.4'	
GHA		217° 15.6'	East long so add
LHA		392°	
	-360	32°	
Assumed lat		S 41°	

Lat/dec contrary signs
Zn=Z+180

Hc	**d**	**Z**	**Zn**
19° 26'	54'	149°	329°
-17'			
19° 09'			
Intercept	15'	towards	

Inc Dec 19'
Inc Alt -17'

Cosine Formula and Calculator

Hc = sin-1[sin(Declination) x sin(Latitude) + (cos(Latitude) x cos(Declination) x cos(LHA)]
HC =Sin-1(Sin(Latitude) x Sin(Declination) + Cos(Latitude) x Cos(Declination) x Cos(LHA)

When the celestial body's Declination is South enter the negative sign before it

Measured position			**Assumed Position**		
Lat	41° 06	-41.1	Lat	-41°	
Dec	23° 19'	23.32	Dec	23° 19'	23.32
			LHA	32°	

result of calc		19.1178°
	Hc	19° 07'
	Intercept	13'

Distance By Plane Trig

dlong	20.7'	departure	15.60
dlat	6.4'		
pythagoras		17	