

ψ	ψ	(a)	(b)	$\log e.a$	$\log e.b$	e^a	e^b
Radianes	Grados	$0,924\psi$	$0,383\psi$				
0	0	0	0	0	0	1	1
0,2	11° 27'	0,1848	0,0766	0,08026	0,03327	1,203	1,079
0,4	22° 55'	0,3696	0,1532	0,16051	0,06653	1,447	1,166
0,6	34° 22'	0,5544	0,2298	0,24077	0,09980	1,741	1,258
0,8	45° 50'	0,7392	0,3064	0,32103	0,13306	2,095	1,359
1	57° 17'	0,9240	0,3830	0,40128	0,16333	2,519	1,467
1,5	85° 55'	1,386	0,5745	0,60193	0,24950	3,999	1,776
2	114° 34'	1,848	0,7660	0,80256	0,33266	6,346	2,151
2,5		2,310	0,9575	1,00321	0,41583	10,074	2,605
3		2,772	1,149	1,20384	0,49899	15,988	3,154
3,5		3,234	1,3405	1,40449	0,58217	25,381	3,821
4		3,696	1,5320	1,60512	0,66532	40,283	4,627
4,5		4,158	1,7235	1,80578	0,74850	63,941	5,604
5		4,620	1,915	2,00640	0,83165	101,490	6,786
6		5,544	2,298	2,4077	0,99798	255,50	9,952
7		6,468	2,681	2,8089	1,16431	644,03	14,598
8		7,392	3,064	3,21027	1,33066	1,622,8	21,409
9		8,316	3,447	3,61156	1,49700	4,088,5	31,410
10		9,240	3,830	4,01284	1,66333	10,300,0	46,061
11		10,164	4,213	4,41412	1,82966	25,950,0	67,556
12		11,088	4,596	4,81541	1,99580	65,374,0	99,038
13		12,012	4,979	5,21669	2,16212	164,700,0	145,320
14		12,936	5,362	5,61797	2,32866	414,860,0	213,140
15		13,860	5,745	6,01925	2,49500	1,045,200,0	312,60
16		14,784	6,128	6,42054	2,66133	2,633,500,0	458,46
17		15,708	6,511	6,82183	2,82766	6,640,200,0	664,92

$\frac{1}{e^a} = c$	$\frac{1}{e^b} = d$	$\text{sen } a$	$\text{cos } a$	$\text{sen } b$	$\text{cos } b$	ϕ_1
1	1	0	1	0	1	0
0,831	0,927					
0,691	0,858					
0,574	0,795	0,527	0,8496	0,228	0,974	0,131
0,477	0,736					
0,397	0,682	0,7976	0,6032	0,3735	0,9277	0,148
0,250	0,563	0,9827	0,1851	0,542	0,8402	0,135
0,158	0,465	0,962	-0,273	0,692	0,721	0,109
0,0993	0,384	0,675	-0,737	0,8175	0,576	0,081
0,0625	0,317	0,361	-0,932	0,912	0,409	0,057
0,0393	0,262	-0,093	-0,995	0,9737	0,228	0,038
0,0248	0,216	-0,527	-0,849	0,999	0,040	0,024
0,0156	0,178	-0,849	-0,527	0,988	-0,153	0,016
0,0098	0,147	-0,994	-0,110	0,942	-0,333	0,0092
0,0059	0,100	-0,673	+0,739	0,747	-0,665	0,0029
0,0016	0,069	0,151	0,988	0,446	-0,896	0,0007
0,00062	0,047	0,894	0,447	0,078	-0,997	0,0005
0,00024	0,032	0,807	-0,590	-0,328	-0,945	-0,0008
0,00010	0,022	0,183	-0,983	-0,636	-0,772	-0,0006
0,00004	0,015	-0,673	-0,739	-0,877	-0,480	-0,0003
0,00001	0,010	-0,996	0,093	-0,990	-0,116	
	0,0069	-0,525	0,850	-0,964	0,264	
	0,0047	0,361	0,932			
	0,0032	0,961	0,275			
	0,0022					
	0,0015					

ϕ_2	ϕ_3	ϕ_4	Valor de (a) en grados	Valor de (b) en grados
1	0	1		
0,559	0,419	0,675		
0,368	0,544	0,411		
0,210	0,553	0,104		
0,112	0,447	-0,127		
0,057	0,259	-0,283		
0,026	0,114	-0,295		
0,009	-0,024	-0,261	184° 77'	76° 46
0,001	-0,114	-0,183		
-0,0024	-0,151	-0,094		
-0,0033	-0,146	-0,062		
-0,0026	-0,067	+0,074	317° 39'	131° 42'
-0,0014	0,010	0,067		
-0,0006	0,042	-0,021		
-0,0002	0,026	-0,019		
-0,0008	0,004	-0,022		
-0,0002	-0,010	-0,011		
	-0,001	0,001		
	-0,0036	0,0058		
	0,0017	0,0044		
	0,0098	0,0099		

277.723,12

28 33
57 17
85 55

555

Clave articulada - 1ª Proveda - 1º término - Paso profeta

2ª Proveda

$+0,25 \times \frac{1}{6,70} (-411,359 + 16,000,000)$
 $+0,25 \times \frac{1}{0,77} (+1,989 + 520 + 1,100)$
 0×-800
 $+0,50 \times (+7,750 + 90,000) \times \frac{1}{28,9}$

12 50 30 40
+ 2.260 + 570 + 570 + 570,0
- 4.700 - 1.175 - 1.175 - 1.175,0
- 800 0 - 1.400 0
+ 3.390 + 1.695 + 3200 + 1.600
+ 1.090 + 895,0 + 895,0 + 995,0

$+0,25 \times \frac{1}{6,70}$
 $-0,25 \times \frac{1}{0,77}$
 $-0,5 \times 1$
 $+0$

+ 570 + 570 + 570,0 + 570,0
+ 1.175 + 1.175 + 1.175,0 + 1.175,0
+ 400 0 + 750,0 + 650,0
0 0 0 0

$0,25 \times \frac{1}{6,70}$
 $0,25 \times \frac{1}{0,77}$
 $-0,5 \times \frac{1}{28,9}$

+ 570 + 570 + 570,0 + 570,0
- 1.175 - 1.175 - 1.175,0 - 1.175,0
0 0 0 0
- 1.695 - 1.600 - 1.600,0 - 1.600,0
- 2.300 - 2.305,0 - 2.305,0 - 2.305,0

$-0,25 \times 1$
 $0,25 \times 1$
 $-0,5 \times 1$
 0

- 570 - 570 - 570,0 - 570,0
- 1.175 - 1.175 - 1.175,0 - 1.175,0
+ 400 0 + 750,0 + 650,0
0 0 0 0

- 1.345 - 1.045 - 995,0 - 1.095,0

$+0,25 \times \frac{1}{9,00} (-1.612,910 + 10,480,000)$
 $+0,25 \times \frac{1}{0,66} (+1,764 + 300 + 800)$
 0×-800
 $+0,5 \times (+26,402 + 90,000) \times \frac{1}{43}$

10 50 30 40
+ 980 + 245 + 980 + 245,0
- 4.350 - 1.087 - 4.350 - 1.080,0
- 800 0 - 1.400 0
+ 2.720 + 1.360 + 2.600 + 1.300,0
+ 518 + 465,0 + 465,0 + 465,0

+ 245 + 245 + 245,0 + 245,0
- 1.087 - 1.087 - 1.087,0 - 1.087,0
+ 400 0 + 700,0 + 650,0
0 0 0 0

+ 245 + 245 + 245,0 + 245,0
+ 1.087 + 1.087 + 1.087,0 + 1.087,0
+ 400 0 + 700,0 + 650,0
0 0 0 0

+ 245 + 245 + 245,0 + 245,0
+ 0,25 + 0,25 + 0,25,0 + 0,25,0
- 0,25 - 0,25 - 0,25,0 - 0,25,0
0 0 0 0

+ 245 + 245 + 245,0 + 245,0
- 1.087 - 1.087 - 1.087,0 - 1.087,0
+ 400 0 + 700,0 + 650,0
0 0 0 0

- 0,25 - 0,25 - 0,25,0 - 0,25,0
+ 0,25 + 0,25 + 0,25,0 + 0,25,0
- 0,5 - 0,5 - 0,5,0 - 0,5,0
0 0 0 0

- 245 - 245 - 245,0 - 245,0
- 1.087 - 1.087 - 1.087,0 - 1.087,0
+ 400 0 + 700,0 + 650,0
0 0 0 0

- 732 - 605,0 - 575,0 - 675,0

+ 13,700
 $-2,414 \times -13,700 = +33,000$
 $-2,414 \times -13,700 = +33,000$
+ 13,700

+ 14,800,000,0
+ 71,000,000,0
+ 76,000,000,0
- 18,500,000,0
+ 3,446
+ 3,446

- 11,800
 $+2,414 \times 11,800 = 28,500$
 $+2,414 \times 11,800 = 28,500$
- 11,800

- 6,100,000,0
- 49,000,000,0
+ 63,000,000,0
+ 8,600,000,0
- 1,019
+ 16,500,000,0

+ 2,440,0
 $-0,414 \times -2,440 = + 1,010$
 $+0,414 \times -2,440 = - 1,010$
- 2,440,0

$\theta =$
+ 2,600,000,0
+ 2,600,000,0
+ 2,200,000,0
+ 2,340,000,0
+ 3,280,000,0
+ 669,400,0
+ 11,139,000,0

- 4,800
 $+0,414 \times -4,800 = - 2,000$
 $-0,414 \times -4,800 = + 2,000$
+ 4,800

$\theta =$
- 2,480,000,0
- 3,450,000,0
- 4,400,000,0
- 3,500,000,0
- 924,722
+ 5,300,000,0
- 2,330,000,0
- 4,150,000,0
- 4,350,000,0
- 3,000,000,0
- 2,470,000,0

+ 0,113
 $+2,414 \times -0,113 = - 0,275$
 $-2,414 \times -0,113 = + 0,275$
- 0,113

η
+ 121
- 590
- 630
+ 152
+ 11,139,000,0

- 0,145
 $-2,414 \times -0,145 = + 0,35$
 $+2,414 \times -0,145 = - 0,35$
+ 0,145

$\eta =$
- 75,0
+ 610,0
+ 770,0
- 106,0
- 14,755,000,0
- 67,5
+ 71,0
+ 745,0
- 90,0

+ 0,3
 $+0,414 \times -0,3 = - 0,125$
 $+0,414 \times -0,3 = - 0,125$
+ 0,3

N
- 947
+ 325
- 270
+ 288
- 405
- 551
- 613
- 323
- 936

- 0,33
 $-0,414 \times -0,33 = + 0,136$
 $-0,414 \times -0,33 = + 0,136$
- 0,33

$N =$
+ 1.179
- 170,0
+ 225,0
- 200,0
+ 240,0
+ 318,0
+ 1298,5
- 153,0
+ 281,0
- 290,0
+ 190,0
+ 318,0

ds
2x
- 936

ds
2x
+ 323,0