

## TABELA DAS ÁREAS DOS QUADRILÁTEROS SÔBRE O ELIPSÓIDE DE REFERÊNCIA INTERNACIONAL

- 1) Com 1 grau de extensão em latitude e longitude, de 0° a 90°
- 2) Com 30 minutos de extensão em latitude e longitude, de 0° a 45°
- 3) Com 10 minutos de extensão em latitude e longitude, de 0° a 45°

### ÁREAS DOS QUADRILÁTEROS COM 1 GRAU DE EXTENSÃO EM LATITUDE E LONGITUDE SÔBRE O ELIPSÓIDE INTERNACIONAL

LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>
0°30'	12 309,08	30°30'	10 643,08	60°30'	6 123,71
1°30'	305,43	31°30'	534,23	61°30'	5 935,07
2°30'	298,14	32°30'	422,17	62°30'	744,51
3°30'	287,19	33°30'	306,92	63°30'	552,11
4°30'	272,61	34°30'	188,51	64°30'	357,91
5°30'	254,38	35°30'	066,97	65°30'	161,99
6°30'	232,52	36°30'	9 942,34	66°30'	4 964,39
7°30'	207,02	37°30'	814,65	67°30'	765,18
8°30'	177,91	38°30'	683,93	68°30'	564,43
9°30'	145,17	39°30'	550,22	69°30'	362,19
10°30'	108,82	40°30'	413,55	70°30'	158,54
11°30'	068,87	41°30'	273,96	71°30'	3 953,53
12°30'	025,33	42°30'	131,49	72°30'	747,23
13°30'	11 978,20	43°30'	8 986,18	73°30'	539,71
14°30'	927,50	44°30'	838,06	74°30'	331,04
15°30'	873,24	45°30'	687,18	75°30'	121,27
16°30'	815,44	46°30'	533,59	76°30'	2 910,48
17°30'	754,10	47°30'	377,31	77°30'	698,74
18°30'	689,24	48°30'	218,41	78°30'	486,12
19°30'	620,88	49°30'	056,91	79°30'	272,68
20°30'	549,04	50°30'	7 892,88	80°30'	053,49
21°30'	473,72	51°30'	726,36	81°30'	1 843,63
22°30'	394,95	52°30'	557,39	82°30'	628,16
23°30'	312,76	53°30'	386,02	83°30'	412,16
24°30'	227,14	54°30'	212,31	84°30'	195,69
25°30'	138,14	55°30'	036,30	85°30'	978,83
26°30'	045,77	56°30'	6 858,05	86°30'	761,65
27°30'	10 950,06	57°30'	677,61	87°30'	544,21
28°30'	851,02	58°30'	495,04	88°30'	326,60
29°30'	748,69	59°30'	310,39	89°30'	108,88

Fórmula utilizada

$$S = 12351,1203271 \cos \varphi - 41,6872825 \cos 3 \varphi + 0,1054566 \cos 5 \varphi - 0,0002370 \cos 7 \varphi$$

### ÁREAS DOS QUADRILÁTEROS COM 30 MINUTOS DE EXTENSÃO EM LATITUDE E LONGITUDE SÔBRE O ELIPSÓIDE INTERNACIONAL

LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>
0°15'	3 077,385	5°45'	62,342	11°15'	19,827
0°45'	77,157	6°15'	59,610	11°45'	14,608
1°15'	76,700	6°45'	56,650	12°15'	09,165
1°45'	76,016	7°15'	53,463	12°45'	03,498
2°15'	75,104	7°45'	50,049	13°15'	2 997,607
2°45'	73,964	8°15'	46,409	13°45'	91,493
3°15'	72,596	8°45'	42,543	14°15'	85,155
3°45'	71,001	9°15'	38,451	14°45'	78,595
4°15'	69,177	9°45'	34,133	15°15'	2 971,813
4°45'	67,126	10°15'	29,589	15°45'	64,809
5°15'	64,848	10°45'	24,820	16°15'	57,533

ÁREAS DOS QUADRILÁTEROS COM 30 MINUTOS DE EXTENSÃO EM LATITUDE E LONGITUDE  
SÔBRE O ELIPSÓIDE INTERNACIONAL

LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>
16°45'	50,136	26°15'	67,321	35°45'	09,050
17°15'	42,469	26°45'	55,566	36°15'	2 493,471
17°45'	34,581	27°15'	43,601	36°45'	77,700
18°15'	26,474	27°45'	31,428	37°15'	61,739
18°45'	18,148	28°15'	19,049	37°45'	45,587
19°15'	09,602	28°45'	06,462	38°15'	29,247
19°45'	00,839	29°15'	2 693,670	38°45'	12,719
20°15'	2 891,858	29°45'	80,674	39°15'	2 396,005
20°45'	82,660	30°15'	2 667,473	39°45'	79,105
21°15'	73,246	30°45'	54,069	40°15'	62,021
21°45'	63,615	31°15'	40,463	40°45'	44,754
22°15'	53,769	31°45'	26,655	41°15'	27,305
22°45'	43,708	32°15'	12,647	41°45'	09,675
23°15'	33,433	32°45'	2 598,439	42°15'	2 291,866
23°45'	22,945	33°15'	84,032	42°45'	73,879
24°15'	12,243	33°45'	69,427	43°15'	55,714
24°45'	01,329	34°15'	54,626	43°45'	37,374
25°15'	2 790,204	34°45'	39,629	44°15'	18,859
25°45'	78,868	35°15'	24,436	44°45'	2 200,171

Fórmula utilizada

$$S = 3087,8094755 \cos \varphi - 10,42271358 \cos 3 \varphi + 0,0263704 \cos 5 \varphi - 0,00005929 \cos 7 \varphi.$$

ÁREAS DOS QUADRILÁTEROS COM 10 MINUTOS DE EXTENSÃO EM LATITUDE E LONGITUDE  
SÔBRE O ELIPSÓIDE INTERNACIONAL

LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>
0°05'	341,9354	25'	,4496	45'	,0921
15'	,9326	35'	,3568	55'	335,9099
25'	,9269	45'	,2612	11°05'	,7249
35'	,9185	55'	,1628	15'	,5372
45'	,9072	6°05'	,0616	25'	,3467
55'	,8931	15'	339,9575	35'	,1534
1°05'	,8762	25'	,8507	45'	334,9574
15'	,8565	35'	,7411	55'	,7585
25'	,8340	45'	,6287	12°05'	,5569
35'	,8087	55'	,5134	15'	,3526
45'	,7805	7°05'	,3954	25'	,1454
55'	,7496	15'	,2746	35'	333,9356
2°05'	,7158	25'	,1510	45'	,7229
15'	,6792	35'	,0245	55'	,5075
25'	,6398	45'	338,8953	13°05'	,2893
35'	,5976	55'	,7633	15'	,0684
45'	,5525	8°05'	,6285	25'	332,8447
55'	,5047	15'	,4909	35'	,6182
3°05'	,4540	25'	,3505	45'	,3890
15'	,4005	35'	,2073	55'	,1570
25'	,3442	45'	,0613	14°05'	331,9223
35'	,2851	55'	337,9125	15'	,6848
45'	,2232	9°05'	,7609	25'	,4446
55'	,1585	15'	,6066	35'	,2016
4°05'	,0910	25'	,4495	45'	330,9559
15'	,0206	35'	,2895	55'	,7075
25'	340,9475	45'	,1268	15°05'	,4563
35'	,8715	55'	336,9613	15'	2023
45'	,7928	10°05'	,7930	25'	329,9457
55'	,7112	15'	,6220	35'	6862
5°05'	,6268	25'	,4481	45'	4241
15'	,5396	35'	,2715	55'	1592

ÁREAS DOS QUADRILÁTEROS COM 10 MINUTOS DE EXTENSÃO EM LATITUDE E LONGITUDE  
SÔBRE O ELIPSÓIDE INTERNACIONAL

LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>	LATITUDE MÉDIA	Área km <sup>2</sup>
16°05'	328,8916	45'	308,7640	25'	279,9263
15'	6212	55'	,3389	35'	9,3564
25'	3481	26°05'	307,9113	45'	8,7842
35'	0723	15'	,4810	55'	8,2095
45'	327,7938	25'	,0482	36°05'	7,6325
55'	5126	35'	306,6128	15'	7,0531
17°05'	2286	45'	,1748	25'	6,4714
15'	326,9419	55'	305,7343	35'	5,8873
25'	6525	27°05'	,2911	45'	5,3008
35'	3603	15'	304,8454	55'	4,7120
45'	0655	25'	,3971	37°05'	4,1208
55'	325,7679	35'	303,9463	15'	3,5273
18°05'	4677	45'	,4929	25'	2,9314
15'	1647	55'	,0369	35'	2,3332
25'	324,8530	28°05'	302,5784	45'	1,7327
35'	5506	15'	,1174	55'	1,1298
45'	2395	25'	301,6537	38°05'	0,5246
55'	323,9257	35'	,1876	15'	269,9171
19°05'	6092	45'	300,7189	25'	9,3072
15'	2901	55'	,2476	35'	8,6951
25'	322,9682	29°05'	299,7739	45'	8,0806
35'	6436	15'	,2976	55'	7,4639
45'	3164	25'	298,8187	39°05'	6,8448
55'	321,9864	35'	,3373	15'	6,2235
20°05'	,6538	45'	297,8535	25'	5,5999
15'	3185	55'	,3671	35'	4,9739
25'	320,9805	30°05'	296,8781	45'	4,3457
35'	6398	15'	,3867	55'	3,7153
45'	2965	25'	295,8928	40°05'	263,0825
55'	319,9504	35'	,3963	15'	2,4475
21°05'	6018	45'	294,8974	25'	1,8103
15'	2504	55'	,3959	35'	1,1707
25'	318,8964	31°05'	293,8920	45'	0,5290
35'	,5397	15'	,3856	55'	259,8849
45'	,1803	25'	292,8766	41°05'	9,2387
55'	317,8183	35'	,3652	15'	8,5902
22°05'	,4536	45'	291,8514	25'	7,9395
15'	,0863	55'	,3350	35'	7,2865
25'	316,7163	32°05'	290,8162	45'	6,6313
35'	,3437	15'	,2949	55'	5,9739
45'	315,9685	25'	289,7711	42°05'	5,3143
55'	,5905	35'	,2449	15'	4,6525
23°05'	,2100	45'	288,7162	25'	3,9885
15'	314,8268	55'	,1851	35'	3,3223
25'	,4409	33°05'	287,6515	45'	2,6539
35'	,0525	15'	,1155	55'	1,9833
45'	313,6614	25'	286,5770	43°05'	1,3106
55'	,2677	35'	,0361	15'	0,6356
24°05'	312,8713	45'	285,4927	25'	249,9585
15'	,4723	55'	284,9470	35'	9,2792
25'	,0707	34°05'	,3988	45'	8,5978
35'	311,6665	15'	283,8481	55'	7,9142
45'	,2597	25'	,2951	44°05'	7,2285
55'	310,8502	35'	282,7396	15'	6,5406
25°05'	,4382	45'	,1818	25'	5,8506
15'	,0235	55'	281,6215	35'	5,1584
25'	309,6063	35°05'	,0588	45'	4,4641
35'	,1864	15'	280,4937	55'	243,7677

Fórmula utilizada

$$S = 343,0909094 \cos \varphi - 1,158109 \cos 3 \varphi + 0,00293025 \cos 5 \varphi.$$