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PRIRUČNIK
ZA OBELEŽAVANJE PRELAZNICE
OBLIKA KLOTOIDE
PRAVOUGLIM KOORDINATAMA

Računski obradio
Ing. ALEKSANDAR MAKAROV

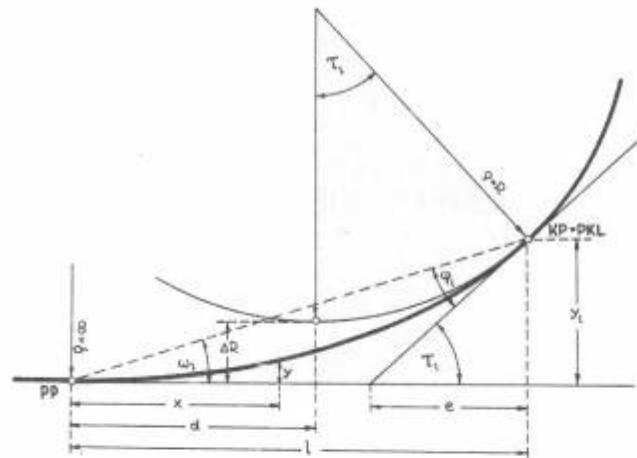
TREĆE IZDANJE

Izdavačko preduzeće
»GRADEVINSKA KNJIGA«
BEOGRAD 1972.

NAPOMENE

Prelaz od ordinata prelaznice na ordinate kružnog luka naznačen je u tabelama debljim otiskom. Debelo odštampana ordinata je već ordinata kružnog luka.

Sve oznake u tabelama vide se na sledećoj slici:



- R = poluprečnik kružnog luka
 L = lučna dužina prelaznice
 l = apscisna dužina prelaznice
 d = udaljenost početka prelaznice od teorijskog početka odmaknutog kružnog luka
 y_l = ordinata krajnje tačke prelaznice
 x = apscisa proizvoljne tačke prelaznice

R	20				
	10	15	20	25	30
l	9,938	14,790	19,506	24,041	28,356
d	4,990	7,465	9,917	12,389	14,723
y_l	0,880	1,856	3,274	5,065	7,204
ΔR	0,208	0,466	0,826	1,284	1,838
e	3,249	4,718	5,994	7,020	7,733
τ_l	14° 19' 26,2"	21° 29' 09,3"	28° 38' 52,4"	35° 48' 35,5"	42° 58' 18,0"
ω_l	4° 46' 19,6"	7° 09' 12,3"	9° 31' 44,3"	11° 53' 48,4"	14° 15' 17,3"
ϕ_l	9° 33' 06,6"	14° 19' 57,0"	18° 07' 08,1"	23° 54' 47,1"	28° 43' 01,3"
$x = 5$	0,104	0,069	0,052	0,042	0,035
10	0,846	0,559	0,418	0,334	0,278
15	2,893	1,940	1,433	1,138	0,945
20		4,882	3,554	2,773	2,282
25			7,692	5,802	4,655
30				11,898	8,930

R = 20, 25

R	20		25		
	35	40	10	15	20
l	32,414	36,181	9,960	14,866	19,682
d	17,063	19,351	4,993	7,478	9,947
y_l	9,663	12,411	0,665	1,490	2,636
ΔR	2,483	3,217	0,166	0,374	0,663
e	8,070	7,969	3,279	4,818	6,236
τ_l	50°08'01,7"	57°17'44,8"	11°27'38,0"	17°11'19,4"	22°55'05,9"
ω_l	16°36'03,3"	18°55'58,6"	3°49'06,3"	5°43'30,7"	7°37'44,6"
φ_l	33°31'58,4"	38°21'46,2"	7°38'26,7"	11°27'48,7"	15°17'21,3"
$x = 5$	0,030	0,026	0,083	0,056	0,042
10	0,238	0,209	0,673	0,446	0,334
15	0,808	0,706	2,256	1,532	1,188
20	1,942	1,691		3,738	2,773
25	3,910	3,379			5,709
30	7,219	6,117			
35	13,636	10,759			

R = 25

R	25				
	25	30	35	40	45
l	24,382	28,938	33,323	37,515	41,489
d	12,397	14,822	17,218	19,580	21,906
y_l	4,093	5,847	7,885	10,189	12,789
ΔR	1,032	1,481	2,006	2,607	3,279
e	7,492	8,547	9,362	9,896	10,109
τ_l	28°38'52,4"	34°22'38,9"	40°06'25,4"	45°50'11,8"	51°33'58,3"
ω_l	9°31'44,3"	11°25'26,1"	13°18'46,4"	15°11'41,3"	17°03'06,6"
φ_l	19°07'08,1"	22°57'12,8"	26°47'39,0"	30°38'30,5"	34°29'51,7"
$x = 5$	0,033	0,028	0,024	0,021	0,019
10	0,267	0,222	0,191	0,167	0,148
15	0,907	0,754	0,645	0,564	0,501
20	2,186	1,808	1,543	1,346	1,194
25	4,441	3,624	3,069	2,665	2,357
30	8,280	6,616	5,509	4,734	4,160
35		11,721	9,433	7,920	6,865
40			16,711	13,184	11,025
45					18,705

R = 25, 30

R	25		30		
L	50	10	15	20	25
<i>l</i>	45,226	9,972	14,907	19,779	24,569
<i>d</i>	24,189	4,995	7,484	9,963	12,428
<i>y_l</i>	15,513	0,554	1,244	2,205	3,429
ΔR	4,021	0,139	0,312	0,553	0,863
<i>e</i>	9,961	3,296	4,874	6,367	7,749
τ_l	57° 17' 44,8"	9° 32' 57,5"	14° 19' 26,2"	19° 05' 54,9"	23° 52' 23,7"
ω_l	18° 55' 58,6"	3° 10' 56,4"	4° 46' 19,6"	6° 21' 36,7"	7° 56' 45,6"
φ_l	36° 21' 46,2"	6° 22' 01,1"	9° 33' 06,6"	12° 44' 18,2"	15° 55' 38,1"
<i>x</i> = 5	0,017	0,069	0,046	0,085	0,028
10	0,133	0,559	0,371	0,278	0,222
15	0,451	1,856	1,269	0,945	0,754
20	1,073		3,048	2,282	1,808
25	2,114			4,594	3,624
30	3,714				6,548
35	6,077				
40	9,570				
45	15,167				

R = 30

R	30				
L	30	35	40	45	50
<i>l</i>	29,259	33,828	38,258	42,534	46,638
<i>d</i>	14,876	17,303	19,707	22,085	24,432
<i>y_l</i>	4,911	6,642	8,611	10,806	13,215
ΔR	1,289	1,681	2,187	2,757	3,387
<i>e</i>	8,990	10,064	10,948	11,599	12,005
τ_l	28° 38' 52,4"	33° 25' 21,1"	38° 11' 49,9"	42° 58' 18,6"	47° 44' 47,3"
ω_l	9° 31' 44,3"	11° 06' 30,6"	12° 41' 02,3"	14° 15' 17,3"	15° 49' 13,2"
φ_l	19° 07' 08,1"	22° 18' 50,5"	25° 30' 47,6"	28° 43' 01,3"	31° 55' 34,1"
<i>x</i> = 5	0,028	0,020	0,017	0,015	0,014
10	0,185	0,159	0,139	0,123	0,111
15	0,627	0,537	0,470	0,417	0,375
20	1,499	1,281	1,118	0,998	0,893
25	2,979	2,533	2,205	1,953	1,754
30	5,330	4,485	3,880	3,423	3,065
35	8,990	7,457	6,308	5,573	4,963
40		12,064	10,092	8,688	7,658
45			16,054	13,395	11,546
50				21,768	17,694

R = 30, 35

R	35				
L	30	10	15	20	25
l	54,271	9,980	14,931	19,837	24,688
d	29,027	4,997	7,489	9,973	12,447
y_l	18,016	0,476	1,068	1,894	2,949
ΔR	4,825	0,119	0,267	0,475	0,741
e	11,953	3,306	4,907	6,447	7,904
τ_l	57°17'44,8"	8°11'06,4"	12°16'39,6"	16°22'12,8"	20°27'46,0"
ω_l	18°55'58,6"	2°43'40,4"	4°05'27,5"	5°27'10,7"	6°48'48,7"
φ_l	38°21'46,2"	5°27'26,0"	8°11'12,1"	10°55'02,1"	13°38'57,3"
$x - 5$	0,012	0,060	0,040	0,030	0,024
10	0,093	0,478	0,318	0,238	0,191
15	0,313	1,579	1,082	0,808	0,645
20	0,743		2,579	1,942	1,543
25	1,457			3,865	3,070
30	2,537				5,461
35	4,082				
40	6,225				
45	9,176				
50	13,334				
55	19,812				

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R = 35

R	35				
L	30	35	40	45	50
l	29,454	34,135	38,713	43,176	47,509
d	14,909	17,355	19,784	22,194	24,581
y_l	4,290	5,730	7,443	9,362	11,478
ΔR	1,064	1,445	1,888	2,375	2,923
e	9,258	10,489	11,576	12,499	13,239
τ_l	24°33'19,2"	28°38'52,4"	32°44'25,6"	36°49'58,8"	40°55'32,0"
ω_l	8°10'20,4"	9°31'44,3"	10°52'59,1"	12°14'08,4"	13°34'55,9"
φ_l	16°22'58,8"	19°07'08,1"	21°51'26,5"	24°35'55,4"	27°20'36,1"
$x - 5$	0,020	0,017	0,015	0,013	0,012
10	0,159	0,136	0,119	0,106	0,095
15	0,537	0,460	0,402	0,358	0,322
20	1,281	1,095	0,957	0,850	0,764
25	2,533	2,159	1,882	1,669	1,499
30	4,485	3,795	3,295	2,913	2,612
35	7,405	6,218	5,353	4,707	4,206
40		9,758	8,312	7,237	6,423
45			12,611	10,825	9,492
50				16,119	13,863
55					20,612

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R - 35, 40

R	35	40			
L	60	10	15	20	25
<i>l</i>	55,789	9,984	14,947	19,875	24,757
<i>d</i>	29,280	4,997	7,491	9,979	12,459
<i>y_l</i>	16,264	0,416	0,935	1,659	2,586
ΔR	4,175	0,104	0,234	0,416	0,649
<i>e</i>	14,083	3,312	4,929	6,498	8,004
τ_l	49°06'38,4"	7°09'43,1"	10°44'34,7"	14°19'26,2"	17°54'17,8"
ω_l	16°15'59,8"	2°23'13,2"	3°34'47,7"	4°46'19,6"	5°57'47,2"
φ_l	32°50'38,8"	4°46'29,9"	7°09'47,0"	9°33'06,6"	11°56'30,6"
<i>x</i> = 5	0,010	0,052	0,035	0,026	0,021
10	0,079	0,418	0,278	0,209	0,167
15	0,268	1,375	0,945	0,706	0,564
20	0,636		2,240	1,692	1,346
25	1,246			3,344	2,666
30	2,166				4,700
35	3,472				
40	5,262				
45	7,671				
50	10,919				
55	15,437				
60	22,404				

R - 40

R	40				
L	30	35	40	45	50
<i>l</i>	29,581	34,336	39,012	43,597	48,082
<i>d</i>	14,980	17,389	19,834	22,265	24,678
<i>y_l</i>	3,713	5,035	6,549	8,249	10,130
ΔR	0,933	1,267	1,652	2,086	2,568
<i>e</i>	9,432	10,764	11,987	13,084	14,040
τ_l	21°29'09,3"	25°04'00,9"	28°38'52,4"	32°13'44,0"	35°48'35,5"
ω_l	7°09'12,3"	8°20'31,3"	9°31'44,3"	10°42'50,3"	11°53'48,4"
φ_l	14°19'57,0"	16°43'29,6"	19°07'08,1"	21°30'53,7"	23°54'47,1"
<i>x</i> = 5	0,017	0,015	0,013	0,012	0,010
10	0,139	0,119	0,104	0,093	0,083
15	0,470	0,402	0,352	0,313	0,281
20	1,118	0,957	0,836	0,743	0,668
25	2,205	1,882	1,642	1,457	1,309
30	3,880	3,295	2,866	2,537	2,277
35	6,332	5,352	4,628	4,082	3,653
40		8,271	7,107	6,225	5,547
45			10,561	9,175	8,110
50				13,263	11,604
55					16,480

R = 40, 45

R	40		45		
	L	60	70	10	15
<i>l</i>	56,712	64,827	9,988	14,958	19,901
<i>d</i>	29,446	34,125	4,998	7,493	9,984
<i>y_l</i>	14,408	19,327	0,370	0,832	1,476
ΔR	3,676	4,967	0,093	0,208	0,370
<i>e</i>	15,466	16,140	3,317	4,944	6,533
τ_l	42°58'18,6"	50°08'01,7"	6°21'58,3"	9°32'57,5"	12°43'56,6"
ω_l	14°15'17,8"	16°36'03,3"	2°07'18,6"	3°10'56,4"	4°14'32,5"
φ_l	28°43'01,3"	33°31'58,4"	4°14'39,7"	6°22'01,1"	8°29'24,1"
<i>x = 5</i>	0,009	0,068	0,046	0,031	0,023
10	0,069	0,060	0,372	0,247	0,185
15	0,234	0,201	1,219	0,839	0,627
20	0,556	0,477		1,981	1,499
25	1,089	0,933			2,949
30	1,890	1,617			
35	3,023	2,581			
40	4,564	3,884			
45	6,613	5,598			
50	9,312	7,820			
55	12,901	10,689			
60	17,860	14,437			
65	25,348	19,536			
70		27,276			

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R = 45

R	45				
	L	25	30	35	40
<i>l</i>	24,808	29,688	34,474	39,217	43,888
<i>d</i>	12,468	14,945	17,412	19,869	22,314
<i>y_l</i>	2,302	3,307	4,488	5,843	7,367
ΔR	0,577	0,880	1,128	1,471	1,858
<i>e</i>	8,073	9,551	10,953	12,269	13,485
τ_l	15°54'55,8"	19°05'54,9"	22°16'54,1"	25°27'53,3"	28°38'52,4"
ω_l	5°18'06,1"	6°21'36,7"	7°25'03,7"	8°28'26,4"	9°31'44,3"
φ_l	10°36'49,7"	12°44'18,2"	14°51'50,4"	16°59'26,9"	19°07'08,1"
<i>x = 5</i>	0,019	0,015	0,013	0,012	0,010
10	0,148	0,123	0,106	0,093	0,082
15	0,501	0,417	0,358	0,313	0,278
20	1,194	0,993	0,850	0,743	0,660
25	2,357	1,953	1,669	1,457	1,293
30	4,133	3,423	2,913	2,537	2,248
35		5,546	4,707	4,082	3,606
40			7,208	6,225	5,472
45				9,142	7,995
50					11,383

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R = 45, 50

R	45			50	
	L	50	60	70	10
<i>l</i>	48,479	57,388	65,882	9,990	14,966
<i>d</i>	24,745	29,561	34,306	4,998	7,494
<i>y_l</i>	9,057	12,916	17,379	0,333	0,749
ΔR	2,289	3,281	4,440	0,088	0,187
<i>e</i>	14,590	16,415	17,646	3,320	4,955
τ_l	81°49'51,5"	38°11'49,9"	44°38'48,2"	5°43'46,5"	8°35'39,7"
ω_l	10°34'56,6"	12°41'02,3"	14°46'38,1"	1°54'34,9"	2°51'51,3"
φ_l	21°14'54,9"	25°30'47,6"	29°47'10,1"	3°49'11,6"	5°43'48,4"
<i>x</i> = 5	0,009	0,008	0,007	0,042	0,028
10	0,074	0,062	0,053	0,334	0,222
15	0,250	0,208	0,179	1,094	0,754
20	0,594	0,494	0,424		1,776
25	1,163	0,967	0,829		
30	2,019	1,677	1,435		
35	3,232	2,679	2,289		
40	4,888	4,034	3,438		
45	7,100	5,820	4,942		
50	10,044	8,143	6,874		
55	13,978	11,159	9,333		
60		15,138	12,468		
65		20,549	16,533		
70			22,037		
75			30,281		

R = 50

R	50				
	L	20	25	30	35
<i>l</i>	19,920	24,844	29,731	34,574	39,365
<i>d</i>	9,987	12,474	14,955	17,429	19,894
<i>y_l</i>	1,330	2,074	2,981	4,048	5,273
ΔR	0,333	0,520	0,748	1,016	1,326
<i>e</i>	6,559	8,123	9,636	11,089	12,471
τ_l	11°27'33,0"	14°19'26,2"	17°11'19,4"	20°08'12,7"	22°55'05,9"
ω_l	3°49'06,3"	4°46'19,6"	5°43'30,7"	6°40'39,1"	7°37'44,6"
φ_l	7°38'26,7"	9°33'06,6"	11°27'48,7"	13°22'33,6"	15°17'21,3"
<i>x</i> = 5	0,021	0,017	0,014	0,012	0,010
10	0,167	0,133	0,111	0,095	0,083
15	0,564	0,451	0,375	0,322	0,281
20	1,346	1,073	0,893	0,764	0,668
25	2,640	2,114	1,754	1,499	1,309
30		3,692	3,065	2,612	2,277
35			4,942	4,205	3,653
40				6,400	5,547
45					8,086

R = 50

R	50				
L	45	50	60	70	80
l	44,097	48,764	57,876	66,647	75,029
d	22,849	24,793	29,644	34,436	39,162
y_l	6,653	8,186	11,695	15,771	20,378
ΔR	1,675	2,065	2,962	4,013	5,213
e	13,773	14,984	17,094	18,723	19,791
τ_l	25°46'59,2"	28°38'52,4"	34°22'38,9"	40°06'25,4"	45°50'11,8"
ω_l	8°34'46,4"	9°31'44,3"	11°25'26,1"	13°18'46,4"	15°11'41,3"
σ_l	17°12'12,8"	19°07'08,1"	22°57'12,8"	26°47'39,0"	30°38'30,5"
$x = 5$	0,009	0,008	0,007	0,006	0,005
10	0,074	0,067	0,056	0,048	0,042
15	0,250	0,225	0,188	0,161	0,141
20	0,594	0,534	0,445	0,381	0,334
25	1,163	1,045	0,870	0,745	0,652
30	2,019	1,814	1,508	1,291	1,128
35	3,232	2,899	2,405	2,056	1,796
40	4,888	4,372	3,616	3,085	2,692
45	7,100	6,325	5,203	4,426	3,854
50	10,017	8,884	7,248	6,138	5,331
55		12,221	9,866	8,298	7,177
60			13,231	11,012	9,467
65			17,607	14,441	12,303
70				18,868	15,839
75				24,780	20,347
80					26,364
85					35,241

80

R = 55

R	55				
L	10	15	20	25	30
l	9,992	14,972	19,934	24,871	29,778
d	4,999	7,495	9,989	12,479	14,963
y_l	0,308	0,681	1,209	1,887	2,713
ΔR	0,076	0,170	0,303	0,473	0,680
e	3,322	4,962	6,577	8,159	9,699
τ_l	5°12'31,4"	7°48'47,0"	10°25'02,7"	13°01'18,4"	15°37'34,0"
ω_l	1°44'10,0"	2°36'14,2"	3°28'17,4"	4°20'19,3"	5°12'19,5"
σ_l	3°28'21,4"	5°12'32,8"	6°56'45,3"	8°40'59,1"	10°25'14,5"
$x = 5$	0,038	0,025	0,019	0,015	0,013
10	0,304	0,202	0,152	0,121	0,101
15	0,993	0,684	0,513	0,410	0,341
20		1,610	1,222	0,974	0,811
25			2,391	1,917	1,591
30				3,338	2,775
35					4,460

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R = 55

R	55				
L	35	40	45	50	60
I	34,647	39,474	44,253	48,977	58,289
d	17,441	19,912	22,375	24,829	29,705
y_i	3,685	4,803	6,063	7,465	10,679
ΔH	0,925	1,206	1,525	1,880	2,698
e	11,189	12,621	13,985	15,275	17,598
τ_i	18°13'49,7"	20°50'05,4"	23°26'21,1"	26°02'36,7"	31°15'08,1"
ω_i	6°04'17,8"	6°56'13,7"	7°48'07,0"	8°39'57,3"	10°28'27,6"
φ_i	12°09'31,9"	13°53'51,7"	15°38'14,1"	17°22'39,4"	20°51'40,5"
$x = 5$	0,011	0,009	0,008	0,008	0,006
10	0,087	0,076	0,067	0,061	0,051
15	0,292	0,256	0,227	0,205	0,171
20	0,694	0,607	0,540	0,485	0,404
25	1,361	1,189	1,056	0,950	0,791
30	2,368	2,065	1,832	1,647	1,369
35	3,903	3,308	2,929	2,629	2,183
40	5,764	5,006	4,419	3,957	3,277
45		7,261	6,394	5,707	4,706
50			8,968	7,978	6,587
55				10,894	8,857
60					11,794
65					15,517

R = 55, 60

R	55		60		
L	70	80	10	15	20
I	67,218	75,871	9,993	14,977	19,945
d	34,533	39,305	4,999	7,496	9,991
y_i	14,424	18,673	0,278	0,624	1,109
ΔH	3,659	4,758	0,069	0,156	0,278
e	19,521	20,981	3,324	4,968	6,592
τ_i	36°27'39,4"	41°40'10,8"	4°46'28,7"	7°09'43,1"	9°32'57,5"
ω_i	12°06'41,6"	13°49'36,8"	1°35'29,2"	2°23'13,2"	3°10'56,4"
φ_i	24°20'57,8"	27°50'34,0"	3°10'59,5"	4°46'29,9"	6°22'01,1"
$x = 5$	0,005	0,005	0,085	0,023	0,017
10	0,043	0,038	0,278	0,185	0,139
15	0,146	0,128	0,908	0,627	0,470
20	0,347	0,303		1,473	1,119
25	0,677	0,593			2,186
30	1,173	1,025			
35	1,867	1,631			
40	2,799	2,443			
45	4,010	3,495			
50	5,549	4,826			
55	7,479	6,484			
60	9,880	8,525			
65	12,868	11,028			
70	16,622	14,101			
75	21,411	17,914			
80		22,759			
85		29,148			

R = 60

R	60				
	25	30	35	40	45
<i>l</i>	24,892	29,813	34,703	39,558	44,371
<i>d</i>	12,482	14,969	17,451	19,926	22,395
<i>y_l</i>	1,731	2,489	3,382	4,409	5,569
ΔR	0,433	0,624	0,848	1,107	1,399
<i>e</i>	8,187	9,747	11,265	12,734	14,147
τ_l	11°56'11,8"	14°19'26,2"	16°42'40,6"	19°05'54,9"	21°29'09,3"
ω_l	3°58'38,7"	4°46'19,6"	5°33'59,0"	6°21'36,7"	7°09'12,3"
φ_l	7°57'33,1"	9°33'06,6"	11°08'41,6"	12°44'18,2"	14°19'57,0"
<i>x</i> = 5	0,014	0,012	0,010	0,009	0,008
10	0,111	0,098	0,079	0,069	0,062
15	0,375	0,313	0,268	0,234	0,208
20	0,893	0,743	0,636	0,556	0,494
25	1,753	1,457	1,246	1,089	0,967
30	3,047	2,537	2,166	1,890	1,677
35		4,066	3,472	3,023	2,679
40			5,246	4,565	4,034
45				6,597	5,820
50					8,126

84

R = 60

R	60				
	50	60	70	80	90
<i>l</i>	49,139	58,517	67,655	76,517	85,068
<i>d</i>	24,856	29,752	34,607	39,415	44,169
<i>y_l</i>	6,859	9,823	13,284	17,221	21,612
ΔR	1,725	2,478	3,362	4,375	5,513
<i>e</i>	15,497	17,981	20,129	21,887	23,199
τ_l	23°52'23,7"	28°38'52,4"	33°25'21,1"	38°11'49,9"	42°58'18,6"
ω_l	7°56'45,6"	9°31'44,3"	11°06'30,6"	12°41'02,3"	14°15'17,3"
φ_l	15°55'38,1"	19°07'08,1"	22°18'50,5"	25°30'47,6"	28°43'01,3"
<i>x</i> = 5	0,007	0,006	0,006	0,004	0,004
10	0,056	0,046	0,040	0,035	0,031
15	0,188	0,156	0,134	0,117	0,104
20	0,445	0,371	0,318	0,278	0,247
25	0,870	0,725	0,621	0,543	0,483
30	1,508	1,255	1,074	0,939	0,835
35	2,405	1,998	1,710	1,494	1,327
40	3,616	2,997	2,561	2,237	1,985
45	5,203	4,298	3,666	3,197	2,836
50	7,248	5,957	5,066	4,410	3,907
55	9,847	8,046	6,812	5,915	5,231
60		10,660	8,970	7,760	6,847
65		13,923	11,628	10,007	8,799
70			14,913	12,735	11,146
75			18,995	16,066	13,967
80				20,184	17,376
85				25,362	21,549
90					26,789
95					33,635

85

R	65				
	L	10	15	20	25
l	9,994	14,980	19,953	24,908	29,841
d	4,999	7,497	9,992	12,485	14,973
y_l	0,256	0,576	1,024	1,598	2,299
ΔR	0,064	0,144	0,256	0,400	0,576
e	3,325	4,973	6,603	8,209	9,785
τ_l	4°24'26,5"	6°36'39,8"	8°48'53,1"	11°01'06,3"	13°13'19,6"
ω_l	1°28'08,6"	2°12'12,4"	2°56'15,6"	3°40'18,0"	4°24'19,4"
φ_l	2°56'17,9"	4°24'27,4"	5°52'37,5"	7°20'48,3"	8°49'00,2"
$x = 5$	0,082	0,021	0,016	0,013	0,011
10	0,257	0,171	0,128	0,103	0,085
15	0,888	0,578	0,438	0,347	0,289
20		1,358	1,031	0,823	0,685
25			2,012	1,616	1,343
30				2,804	2,337
35					3,738

R	65				
	L	35	40	45	50
l	34,747	39,623	44,464	49,265	58,734
d	17,458	19,937	22,410	24,877	29,788
y_l	3,125	4,075	5,148	6,343	9,091
ΔR	0,783	1,022	1,293	1,594	2,290
e	11,325	12,823	14,273	15,670	18,279
τ_l	15°25'32,8"	17°37'46,1"	19°49'59,4"	22°02'12,6"	26°26'39,1"
ω_l	5°08'19,6"	5°52'18,4"	6°36'15,6"	7°20'11,0"	8°47'55,5"
φ_l	10°17'13,2"	11°45'27,7"	13°13'43,8"	14°42'01,6"	17°38'43,6"
$x = 5$	0,009	0,008	0,007	0,006	0,005
10	0,073	0,064	0,057	0,051	0,043
15	0,247	0,216	0,192	0,173	0,144
20	0,587	0,514	0,456	0,411	0,342
25	1,150	1,005	0,893	0,803	0,669
30	1,996	1,743	1,547	1,391	1,157
35	3,195	2,784	2,468	2,217	1,843
40	4,817	4,196	3,712	3,329	2,762
45		6,048	5,345	4,782	3,956
50			7,439	6,645	5,474
55				8,995	7,376
60					9,738
65					12,654

R = 65, 70

R	65			70	
	70	80	90	10	15
l	67,997	77,023	85,781	9,995	14,983
d	34,664	39,500	44,291	4,999	7,497
y_l	12,306	15,972	20,069	0,238	0,535
ΔR	3,109	4,048	5,104	0,060	0,134
e	20,602	22,592	24,202	3,326	4,977
τ_l	30° 51' 05,6"	35° 15' 32,2"	39° 39' 58,7"	4° 05' 33,2"	6° 08' 19,8"
ω_l	10° 15' 30,4"	11° 42' 53,8"	13° 10' 04,2"	1° 21' 50,9"	2° 02' 45,9"
φ_l	20° 35' 35,2"	23° 32' 38,4"	26° 29' 54,5"	2° 48' 42,3"	4° 05' 33,9"
$x = 5$	0,005	0,004	0,004	0,030	0,020
10	0,037	0,032	0,028	0,238	0,159
15	0,124	0,108	0,096	0,778	0,537
20	0,293	0,256	0,228		1,260
25	0,573	0,501	0,445		
30	0,991	0,867	0,770		
35	1,577	1,379	1,225		
40	2,361	2,063	1,831		
45	3,377	2,946	2,614		
50	4,661	4,061	3,599		
55	6,258	5,440	4,815		
60	8,221	7,125	6,294		
65	10,620	9,166	8,075		
70	13,553	11,627	10,204		
75	17,138	14,597	12,744		
80		18,208	15,779		
85		22,629	19,431		
90			23,891		
95			29,440		

R = 70

R	70				
	20	25	30	35	40
l	19,959	24,920	29,868	34,782	39,675
d	9,999	12,487	14,977	17,464	19,946
y_l	0,951	1,485	2,186	2,904	3,787
ΔR	0,238	0,372	0,535	0,728	0,950
e	6,612	8,226	9,814	11,372	12,893
τ_l	8° 11' 06,4"	10° 13' 53,0"	12° 16' 39,6"	14° 19' 26,2"	16° 22' 12,8"
ω_l	2° 43' 40,4"	3° 24' 34,4"	4° 05' 27,5"	4° 46' 19,6"	5° 27' 10,7"
φ_l	5° 27' 26,0"	6° 49' 18,6"	8° 11' 12,1"	9° 33' 06,6"	10° 55' 02,1"
$x = 5$	0,015	0,012	0,010	0,009	0,008
10	0,119	0,095	0,079	0,068	0,060
15	0,402	0,322	0,268	0,230	0,201
20	0,957	0,764	0,636	0,545	0,477
25	1,866	1,499	1,246	1,067	0,933
30		2,598	2,166	1,851	1,617
35			3,460	2,960	2,581
40				4,455	3,884
45					5,587

R = 70

R	70				
	L	45	50	60	70
<i>l</i>	44,537	49,366	58,907	68,270	77,427
<i>d</i>	22,423	24,894	29,817	34,710	39,569
<i>y</i> _l	4,786	5,898	8,460	11,460	14,886
ΔR	1,201	1,481	2,129	2,891	3,765
<i>e</i>	14,373	15,807	18,516	20,977	23,152
τ_l	18°24'59,4"	20°27'46,0"	24°33'19,2"	28°38'52,4"	32°44'25,6"
ω_l	6°08'00,4"	6°48'48,7"	8°10'20,4"	9°31'44,3"	10°52'59,1"
φ_l	12°16'59,0"	13°38'57,3"	16°22'58,8"	19°07'08,1"	21°51'26,5"
<i>x</i> = 5	0,007	0,006	0,005	0,004	0,004
10	0,053	0,048	0,040	0,034	0,030
15	0,179	0,161	0,134	0,115	0,100
20	0,424	0,381	0,318	0,272	0,238
25	0,829	0,745	0,621	0,532	0,465
30	1,435	1,291	1,074	0,920	0,805
35	2,289	2,056	1,710	1,464	1,280
40	3,438	3,085	2,561	2,190	1,914
45	4,942	4,426	3,666	3,130	2,733
50	6,861	6,139	5,066	4,317	3,764
55		8,286	6,812	5,789*	5,037
60			8,971	7,591	6,589
65			11,613	9,782	8,461
70				12,437	10,706
75				15,648	13,394
80					16,622
85					20,511

90

R = 70, 75

R	70			75		
	L	90	100	110	10	15
<i>l</i>	86,351	95,017	103,401	108,401	9,996	14,985
<i>d</i>	44,387	49,162	53,887	58,887	4,999	7,498
<i>y</i> _l	18,724	22,956	27,564	27,564	0,222	0,500
ΔR	4,751	5,845	7,046	7,046	0,056	0,125
<i>e</i>	24,999	26,477	27,546	27,546	3,327	4,980
τ_l	86°49'58,8"	40°55'32,0"	45°01'05,2"	8°49'11,0"	5°43'46,5"	
ω_l	12°14'03,4"	13°34'55,9"	14°55'35,2"	1°16'23,5"	1°54'34,9"	
φ_l	24°35'55,4"	27°20'36,1"	30°05'30,0"	2°32'47,5"	3°49'11,6"	
<i>x</i> = 5	0,003	0,003	0,003	0,003	0,028	0,019
10	0,026	0,024	0,022	0,022	0,223	0,148
15	0,089	0,080	0,073	0,073	0,725	0,501
20	0,212	0,191	0,173	0,173		1,174
25	0,414	0,372	0,338	0,338		
30	0,715	0,643	0,585	0,585		
35	1,137	1,023	0,929	0,929		
40	1,699	1,528	1,389	1,389		
45	2,425	2,180	1,980	1,980		
50	3,337	2,998	2,722	2,722		
55	4,461	4,005	3,634	3,634		
60	5,826	5,223	4,735	4,735		
65	7,464	6,682	6,051	6,051		
70	9,415	8,411	7,606	7,606		
75	11,780	10,450	9,431	9,431		
80	14,473	12,846	11,564	11,564		
85	17,737	15,662	14,051	14,051		
90	21,652	18,985	16,953	16,953		
95	26,395	22,941	20,355	20,355		
100		27,726	24,377	24,377		
105		33,630	29,218	29,218		
110			35,197	35,197		

91

R	75				
	L	20	25	30	35
<i>l</i>	19,964	24,931	29,880	34,810	39,716
<i>d</i>	9,994	12,488	14,980	17,468	19,953
<i>y_l</i>	0,888	1,386	1,994	2,712	3,538
ΔR	0,222	0,347	0,499	0,679	0,887
<i>e</i>	6,619	8,240	9,838	11,410	12,950
τ_l	7°38'22,0"	9°32'57,5"	11°27'33,0"	13°22'08,5"	15°16'44,0"
ω_l	2°32'45,9"	3°10'56,4"	3°49'08,3"	4°27'15,4"	5°05'23,6"
φ_l	5°05'36,1"	6°22'01,1"	7°38'26,7"	8°54'53,1"	10°11'20,4"
<i>x</i> = 5	0,014	0,011	0,009	0,008	0,007
10	0,111	0,089	0,074	0,063	0,056
15	0,375	0,300	0,250	0,214	0,188
20	0,893	0,713	0,594	0,509	0,445
25	1,739	1,398	1,163	0,995	0,870
30		2,420	2,019	1,726	1,508
35			3,221	2,757	2,405
40				4,144	3,616
45					5,193

R	75				
	L	45	50	60	70
<i>l</i>	44,797	49,447	59,047	68,491	77,754
<i>d</i>	22,433	24,908	29,841	34,747	39,624
<i>y_l</i>	4,471	5,512	7,909	10,721	13,936
ΔR	1,121	1,383	1,989	2,701	3,520
<i>e</i>	14,454	15,918	18,707	21,281	23,604
τ_l	17°11'19,4"	19°05'54,9"	22°55'05,9"	26°44'16,9"	30°33'27,9"
ω_l	5°43'30,7"	6°21'36,7"	7°37'44,6"	8°53'46,2"	10°09'40,4"
φ_l	11°27'48,7"	12°44'18,2"	15°17'21,3"	17°50'30,7"	20°23'47,5"
<i>x</i> = 5	0,006	0,006	0,005	0,004	0,003
10	0,049	0,044	0,037	0,032	0,028
15	0,167	0,150	0,125	0,107	0,094
20	0,395	0,356	0,296	0,254	0,222
25	0,773	0,696	0,579	0,496	0,434
30	1,339	1,204	1,002	0,859	0,751
35	2,184	1,917	1,595	1,365	1,194
40	3,202	2,875	2,388	2,043	1,785
45	4,597	4,120	3,415	2,918	2,548
50	6,371	5,705	4,715	4,021	3,507
55		7,685	6,331	5,387	4,691
60			8,320	7,054	6,130
65			10,740	9,071	7,860
70				11,503	9,926
75				14,419	12,386
80					15,315
85					18,804

R = 75, 80

R	75			80		
	L	90	100	110	10	15
<i>l</i>	86,814	95,646	104,230	9,996	14,987	
<i>d</i>	44,465	49,268	54,029	4,999	7,498	
<i>y_l</i>	17,542	21,527	25,874	0,208	0,468	
ΔR	4,443	5,468	6,595	0,052	0,117	
<i>e</i>	25,642	27,358	28,718	3,328	4,982	
τ_l	34°22'38,9"	38°11'49,9"	42°01'00,9"	3°34'51,6"	5°22'17,3"	
ω_l	11°25'26,1"	12°41'02,3"	13°56'27,7"	1°11'37,0"	1°47'25,3"	
φ_l	22°57'12,8"	25°30'47,6"	28°04'38,2"	2°23'14,6"	3°34'52,0"	
<i>x = 5</i>	0,003	0,003	0,003	0,026	0,017	
10	0,025	0,022	0,020	0,209	0,139	
15	0,088	0,075	0,068	0,680	0,470	
20	0,198	0,178	0,162		1,100	
25	0,386	0,347	0,316			
30	0,667	0,600	0,546			
35	1,061	0,954	0,867			
40	1,585	1,426	1,296			
45	2,262	2,084	1,847			
50	3,111	2,796	2,539			
55	4,156	3,732	3,387			
60	5,423	4,865	4,412			
65	6,941	6,218	5,684			
70	8,743	7,819	7,076			
75	10,872	9,701	8,764			
80	13,381	11,902	10,730			
85	16,340	14,474	13,012			
90	19,848	17,484	15,660			
95	24,024	21,024	18,786			
100		25,230	22,331			
105		30,279	26,577			
110			31,672			

R = 80

R	80					
	L	20	25	30	35	40
<i>l</i>	19,969	24,939	29,895	34,833	39,751	
<i>d</i>	9,995	12,490	14,982	17,472	19,958	
<i>y_l</i>	0,832	1,300	1,870	2,543	3,318	
ΔR	0,208	0,325	0,468	0,637	0,831	
<i>e</i>	6,624	8,251	9,858	11,441	12,996	
τ_l	7°09'43,1"	8°57'08,9"	10°44'34,7"	12°32'00,4"	14°19'26,2"	
ω_l	2°23'13,2"	2°59'00,7"	3°34'47,7"	4°10'34,1"	4°46'19,6"	
φ_l	4°46'29,9"	5°58'08,2"	7°09'47,0"	8°21'26,3"	9°33'06,6"	
<i>x = 5</i>	0,013	0,010	0,009	0,008	0,007	
10	0,104	0,083	0,069	0,060	0,052	
15	0,352	0,281	0,234	0,201	0,176	
20	0,836	0,668	0,556	0,477	0,417	
25	1,628	1,310	1,089	0,938	0,816	
30		2,265	1,891	1,617	1,413	
35			3,013	2,581	2,252	
40				3,874	3,383	
45					4,852	

R	80				
L	45	50	60	70	80
<i>l</i>	44,645	49,514	59,162	68,672	78,023
<i>d</i>	22,441	24,919	29,860	34,778	39,669
<i>y_l</i>	4,195	5,172	7,425	10,070	13,097
ΔR	1,052	1,298	1,866	2,535	3,304
<i>e</i>	14,520	16,008	18,868	21,529	23,974
τ_l	16°06'52,0"	17°54'17,8"	21°29'09,3"	25°04'00,9"	28°38'52,4"
ω_l	5°22'04,5"	5°57'47,2"	7°09'12,3"	8°20'31,3"	9°31'44,3"
φ_l	10°44'47,5"	11°56'30,6"	14°19'57,0"	16°43'29,6"	19°07'08,1"
<i>x</i> - 5	0,006	0,005	0,004	0,004	0,003
10	0,046	0,042	0,035	0,030	0,026
15	0,156	0,141	0,117	0,100	0,088
20	0,371	0,334	0,278	0,238	0,203
25	0,725	0,652	0,543	0,465	0,407
30	1,255	1,128	0,939	0,805	0,704
35	1,998	1,796	1,494	1,280	1,119
40	2,997	2,692	2,237	1,814	1,673
45	4,298	3,854	3,197	2,733	2,387
50	5,948	5,331	4,410	3,764	3,284
55		7,168	5,915	5,037	4,390
60			7,760	6,589	5,731
65			9,996	8,461	7,341
70				10,706	9,257
75				13,381	11,527
80					14,214
85					17,386

R	80				85
L	90	100	110	120	10
<i>l</i>	87,194	96,164	104,913	113,424	9,997
<i>d</i>	44,530	49,356	54,145	58,892	4,999
<i>y_l</i>	16,497	20,259	24,370	28,816	0,196
ΔR	4,171	5,136	6,197	7,351	0,049
<i>e</i>	26,168	28,080	29,678	30,932	3,329
τ_l	32°13'44,0"	35°48'35,5"	39°23'27,1"	42°58'18,6"	3°22'13,2"
ω_l	10°42'50,3"	11°53'48,4"	13°04'37,7"	14°15'17,3"	1°07'24,3"
φ_l	21°30'53,7"	23°54'47,1"	26°18'49,4"	28°43'01,3"	2°14'48,9"
<i>x</i> - 5	0,003	0,003	0,002	0,002	0,025
10	0,023	0,021	0,019	0,017	0,197
15	0,078	0,070	0,064	0,059	0,640
20	0,185	0,167	0,152	0,139	
25	0,362	0,326	0,296	0,271	
30	0,626	0,563	0,512	0,469	
35	0,994	0,894	0,813	0,745	
40	1,486	1,336	1,214	1,113	
45	2,119	1,905	1,731	1,586	
50	2,914	2,619	2,378	2,179	
55	3,891	3,495	3,173	2,905	
60	5,074	4,553	4,131	3,781	
65	6,488	5,816	5,272	4,822	
70	8,164	7,307	6,616	6,047	
75	10,136	9,055	8,187	7,475	
80	12,450	11,093	10,012	9,129	
85	15,163	13,464	12,123	11,085	
90	18,350	16,220	14,561	13,225	
95	22,101	19,435	17,376	15,738	
100		23,207	20,638	18,623	
105		27,658	24,441	21,947	
110			28,924	25,802	
115				30,326	
120				35,720	

R	85				
	L	15	20	25	30
l	14,988	19,972	24,946	29,907	34,852
d	7,498	9,995	12,491	14,984	17,475
y_l	0,441	0,784	1,224	1,761	2,395
ΔR	0,110	0,196	0,306	0,441	0,600
e	4,984	6,629	8,260	9,874	11,467
τ_l	5°03'19,8"	6°44'26,5"	8°25'33,1"	10°06'39,7"	11°47'46,3"
ω_l	1°41'06,2"	2°14'47,9"	2°48'29,2"	3°22'10,0"	3°55'50,3"
φ_l	5°22'13,6"	4°29'38,6"	5°37'03,9"	6°44'29,7"	7°51'56,0"
$x = 5$	0,016	0,012	0,010	0,008	0,007
10	0,131	0,098	0,078	0,065	0,056
15	0,442	0,331	0,265	0,221	0,189
20	1,035	0,787	0,629	0,524	0,449
25		1,531	1,232	1,025	0,878
30			2,129	1,778	1,521
35				2,831	2,426
40					3,688

R	85				
	L	40	45	50	60
l	39,779	44,686	49,569	59,257	68,822
d	19,968	22,448	24,928	29,876	34,803
y_l	3,125	3,951	4,872	6,996	9,492
ΔR	0,783	0,990	1,222	1,757	2,387
e	13,035	14,575	16,084	18,998	21,734
τ_l	13°28'52,9"	15°09'59,5"	16°51'06,1"	20°13'19,3"	23°35'32,6"
ω_l	4°29'30,0"	5°03'09,1"	5°36'47,2"	6°44'00,8"	7°51'10,0"
φ_l	8°59'22,9"	10°06'50,4"	11°14'18,9"	13°29'18,5"	15°44'22,6"
$x = 5$	0,006	0,005	0,005	0,004	0,004
10	0,049	0,044	0,039	0,033	0,028
15	0,165	0,147	0,132	0,110	0,095
20	0,392	0,349	0,314	0,262	0,224
25	0,767	0,682	0,614	0,511	0,438
30	1,329	1,180	1,062	0,884	0,757
35	2,118	1,879	1,689	1,406	1,204
40	3,178	2,817	2,531	2,108	1,800
45	4,554	4,036	3,621	3,005	2,570
50		5,579	5,004	4,143	3,538
55			6,719	5,552	4,732
60				7,274	6,183
65				9,353	7,930
70					10,017
75					12,498

R	85				
L	80	90	100	110	120
<i>l</i>	78,246	87,510	96,595	105,483	114,157
<i>d</i>	39,707	44,583	49,429	54,241	59,017
<i>y_l</i>	12,352	15,567	19,129	23,025	27,246
ΔR	3,113	3,931	4,842	5,843	6,935
<i>e</i>	24,281	26,605	28,678	30,474	31,964
τ_l	20°57'45,8"	30°19'59,0"	39°42'12,2"	37°04'25,5"	40°26'38,7"
ω_l	8°58'14,3"	10°05'12,7"	11°12'04,6"	12°18'49,2"	13°25'25,7"
φ_l	17°59'31,5"	20°14'46,3"	22°30'07,6"	24°45'36,3"	27°01'13,0"
<i>x</i> = 5	0,003	0,003	0,002	0,002	0,002
10	0,025	0,022	0,020	0,018	0,016
15	0,083	0,074	0,066	0,060	0,055
20	0,196	0,174	0,157	0,143	0,131
25	0,333	0,311	0,306	0,279	0,255
30	0,662	0,589	0,530	0,482	0,441
35	1,053	0,935	0,842	0,765	0,701
40	1,574	1,398	1,257	1,143	1,047
45	2,245	1,993	1,793	1,629	1,492
50	3,088	2,740	2,463	2,237	2,050
55	4,125	3,658	3,286	2,984	2,732
60	5,382	4,767	4,280	3,884	3,555
65	6,887	6,092	5,463	4,954	4,532
70	8,675	7,658	6,859	6,214	5,681
75	10,785	9,497	8,492	7,683	7,018
80	13,270	11,647	10,391	9,387	8,564
85	16,185	14,154	12,592	11,353	10,343
90		17,082	15,139	13,614	12,380
95		20,498	18,090	16,213	14,709
100			21,522	19,205	17,371
105			25,523	22,663	20,417
110				26,688	23,919
115				31,402	27,974
120					32,722

R	90				
L	10	15	20	25	30
<i>l</i>	9,997	14,990	19,975	24,952	29,917
<i>d</i>	4,999	7,498	9,996	12,492	14,986
<i>y_l</i>	0,185	0,416	0,740	1,156	1,663
ΔR	0,046	0,104	0,185	0,289	0,416
<i>e</i>	3,329	4,986	6,633	8,268	9,888
τ_l	3°10'59,2"	4°46'28,7"	6°21'58,3"	7°57'27,9"	9°32'57,5"
ω_l	1°03'39,6"	1°35'29,2"	2°07'18,6"	2°39'07,7"	3°10'56,4"
φ_l	2°07'19,6"	3°10'59,5"	4°14'39,7"	5°18'20,2"	6°22'01,1"
<i>x</i> = 5	0,023	0,015	0,012	0,009	0,008
10	0,185	0,123	0,093	0,074	0,062
15	0,604	0,417	0,313	0,250	0,208
20		0,977	0,743	0,594	0,494
25			1,445	1,163	0,967
30				2,068	1,677
35					2,670

R	90				
L	35	40	45	50	60
l	34,868	39,803	44,720	49,616	59,387
d	17,478	19,967	22,453	24,936	29,889
y_l	2,262	2,953	3,733	4,604	6,614
ΔR	0,566	0,739	0,935	1,154	1,660
e	11,488	13,067	14,621	16,147	19,101
τ_l	11°08'27,0"	12°43'56,6"	14°19'26,2"	15°54'55,8"	19°05'54,9"
ω_l	3°42'44,7"	4°14'32,5"	4°46'19,6"	5°18'06,1"	6°21'36,7"
$\tilde{\tau}_l$	7°25'42,3"	8°29'24,1"	9°33'06,6"	10°36'49,7"	12°44'18,2"
$x = 5$	0,007	0,006	0,005	0,005	0,004
10	0,053	0,046	0,041	0,037	0,031
15	0,179	0,156	0,139	0,125	0,104
20	0,424	0,371	0,329	0,296	0,247
25	0,829	0,725	0,644	0,579	0,483
30	1,435	1,255	1,114	1,002	0,835
35	2,269	1,998	1,774	1,595	1,327
40	3,430	2,997	2,658	2,388	1,985
45		4,291	3,805	3,415	2,836
50			5,255	4,715	3,907
55				6,324	5,231
60					6,847
65					8,791

R	90				
L	70	80	90	100	110
l	68,949	78,434	87,776	96,957	105,962
d	34,824	39,738	44,628	49,490	54,322
y_l	8,977	11,686	14,734	18,114	21,817
ΔR	2,256	2,942	3,717	4,579	5,528
e	21,907	24,538	26,971	29,180	31,141
τ_l	22°16'54,1"	25°27'53,3"	28°38'52,4"	31°49'51,5"	35°00'50,7"
ω_l	7°25'03,7"	8°28'26,4"	9°31'44,3"	10°34'56,6"	11°38'02,8"
$\tilde{\tau}_l$	14°51'50,4"	16°59'26,9"	19°07'08,1"	21°14'54,9"	23°22'47,9"
$x = 5$	0,003	0,003	0,003	0,002	0,002
10	0,026	0,023	0,021	0,019	0,017
15	0,089	0,078	0,069	0,063	0,057
20	0,212	0,185	0,165	0,148	0,135
25	0,414	0,362	0,322	0,289	0,263
30	0,715	0,626	0,556	0,500	0,455
35	1,137	0,994	0,883	0,795	0,722
40	1,699	1,486	1,320	1,187	1,079
45	2,425	2,119	1,882	1,692	1,538
50	3,337	2,914	2,586	2,325	2,112
55	4,461	3,891	3,451	3,101	2,816
60	5,826	5,074	4,496	4,037	3,664
65	7,464	6,488	5,742	5,152	4,673
70	9,415	8,164	7,213	6,464	5,858
75	11,721	10,136	8,936	7,996	7,239
80		12,450	10,945	9,775	8,837
85		15,152	13,279	11,831	10,677
90			15,990	14,201	12,788
95			19,133	16,933	15,205
100				20,089	17,974
105				23,737	21,152
110					24,817
115					29,058

R - 90, 95

R	95				
	90	10	15	20	25
L	120				
<i>l</i>	114,775	9,997	14,991	19,978	24,957
<i>d</i>	59,122	5,000	7,498	9,996	12,493
<i>y_l</i>	25,832	0,175	0,395	0,701	1,095
ΔR	6,562	0,044	0,099	0,175	0,274
<i>e</i>	32,830	3,390	4,987	6,637	8,275
τ_l	35°11'49,9"	3°00'56,0"	4°31'24,1"	6°01'52,1"	7°32'20,1"
ω_l	12°41'02,3"	1°00'18,6"	1°30'27,7"	2°00'36,7"	2°30'45,4"
φ_l	25°30'47,6"	2°00'37,4"	3°00'56,4"	4°01'15,4"	5°01'34,7"
<i>x</i> = 5	0,002	0,022	0,015	0,011	0,009
10	0,015	0,176	0,117	0,088	0,070
15	0,052	0,572	0,395	0,296	0,237
20	0,123		0,925	0,704	0,562
25	0,241			1,368	1,101
30	0,417				1,901
35	0,662				
40	0,989				
45	1,409				
50	1,935				
55	2,579				
60	3,355				
65	4,276				
70	5,357				
75	6,615				
80	8,067				
85	9,735				
90	11,641				
95	13,813				
100	16,286				
105	19,103				
110	22,319				
115	30,276				
120	35,242				

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R - 95

R	95				
	30	35	40	45	50
L					
<i>l</i>	29,925	34,881	39,823	44,748	49,655
<i>d</i>	14,988	17,480	19,970	22,458	24,942
<i>y_l</i>	1,576	2,144	2,798	3,538	4,364
ΔR	0,394	0,537	0,701	0,886	1,094
<i>e</i>	9,899	11,506	13,094	14,660	16,200
τ_l	9°02'48,1"	10°33'16,1"	12°03'44,7"	13°34'12,2"	15°04'40,2"
ω_l	3°00'53,8"	3°31'01,7"	4°01'09,3"	4°31'16,3"	5°01'22,8"
φ_l	6°01'54,3"	7°02'14,4"	8°02'35,4"	9°02'55,9"	10°03'17,4"
<i>x</i> = 5	0,007	0,006	0,005	0,005	0,004
10	0,058	0,051	0,044	0,039	0,035
15	0,197	0,173	0,148	0,132	0,118
20	0,468	0,410	0,351	0,312	0,281
25	0,916	0,801	0,686	0,610	0,549
30	1,588	1,387	1,188	1,055	0,949
35	2,526	2,166	1,892	1,679	1,510
40		3,244	2,836	2,515	2,260
45			4,057	3,600	3,231
50				4,968	4,458
55					5,974

105

R	95					
	L	60	70	80	90	100
<i>l</i>	59,404	69,056	78,593	88,001	97,265	
<i>d</i>	29,901	34,842	39,765	44,666	49,542	
<i>y</i>	6,271	8,514	11,087	13,984	17,200	
ΔR	1,573	2,139	2,789	3,524	4,343	
<i>e</i>	19,193	22,053	24,756	27,281	29,605	
τ_l	18°05'36,3"	21°06'32,3"	24°07'28,3"	27°08'24,4"	30°09'20,4"	
ω_l	6°01'33,7"	7°01'41,6"	8°01'45,8"	9°01'45,9"	10°01'41,4"	
φ_l	12°04'02,6"	14°04'50,7"	16°05'42,5"	18°06'38,5"	20°07'39,0"	
<i>x</i> = 5	0,004	0,008	0,008	0,002	0,002	
10	0,029	0,025	0,022	0,019	0,018	
15	0,099	0,085	0,074	0,066	0,059	
20	0,234	0,201	0,175	0,156	0,140	
25	0,457	0,392	0,343	0,305	0,274	
30	0,791	0,677	0,593	0,527	0,474	
35	1,257	1,077	0,942	0,837	0,753	
40	1,880	1,609	1,407	1,250	1,125	
45	2,684	2,296	2,007	1,782	1,603	
50	3,696	3,159	2,758	2,449	2,202	
55	4,946	4,220	3,682	3,267	2,986	
60	6,468	5,508	4,799	4,254	3,821	
65	8,295	7,050	6,133	5,430	4,874	
70		8,884	7,711	6,817	6,112	
75		11,044	9,564	8,439	7,557	
80			11,730	10,326	9,230	
85			14,250	12,511	11,160	
90				15,039	13,378	
95				17,955	15,924	
100					18,851	
105					22,210	

R	95				100	
	L	110	120	130	140	10
<i>l</i>	106,370	115,301	124,045	132,588	139,998	9,998
<i>d</i>	54,391	59,211	63,999	68,752	73,472	5,000
<i>y</i>	20,725	24,552	28,672	33,075	37,752	0,167
ΔR	5,244	6,227	7,290	8,432	9,642	0,042
<i>e</i>	31,706	33,563	35,153	36,454	37,496	3,330
τ_l	33°10'16,5"	36°11'12,5"	39°12'08,6"	42°13'04,6"	45°14'00,6"	2°51'53,2"
ω_l	11°01'31,6"	12°01'16,1"	13°00'54,3"	14°00'25,6"	15°00'00,0"	0°57'17,7"
φ_l	22°08'44,9"	24°09'56,4"	26°11'14,3"	28°12'39,0"	30°14'13,7"	1°54'35,5"
<i>x</i> = 5	0,002	0,002	0,002	0,002	0,002	0,021
10	0,016	0,015	0,013	0,013	0,013	0,167
15	0,054	0,049	0,046	0,042	0,042	0,543
20	0,128	0,117	0,108	0,100	0,100	
25	0,249	0,228	0,211	0,196	0,196	
30	0,431	0,395	0,364	0,338	0,338	
35	0,684	0,627	0,579	0,538	0,538	
40	1,022	0,937	0,865	0,803	0,803	
45	1,456	1,335	1,232	1,143	1,143	
50	2,000	1,833	1,691	1,570	1,570	
55	2,666	2,442	2,253	2,091	2,091	
60	3,469	3,176	2,929	2,718	2,718	
65	4,422	4,047	3,731	3,462	3,462	
70	5,541	5,069	4,671	4,332	4,332	
75	6,844	6,256	5,763	5,342	5,342	
80	8,350	7,626	7,019	6,504	6,504	
85	10,080	9,196	8,457	7,831	7,831	
90	12,061	10,987	10,094	9,389	9,389	
95	14,321	13,024	11,950	11,045	11,045	
100	16,901	15,336	14,049	12,969	12,969	
105	19,846	17,959	16,419	15,134	15,134	
110	23,220	20,938	19,094	17,566	17,566	
115	27,090	24,333	22,118	20,301	20,301	
120		28,222	25,548	23,380	23,380	
125		32,693	29,462	26,859	26,859	
130			33,960	31,811	31,811	
135				35,342	35,342	
140				40,593	40,593	

R	100				
L	15	20	25	30	35
<i>l</i>	14,992	19,980	24,961	29,933	34,893
<i>d</i>	7,499	9,997	12,494	14,989	17,482
<i>∂l</i>	0,375	0,666	1,041	1,498	2,037
ΔR	0,094	0,167	0,260	0,375	0,510
<i>e</i>	4,989	6,640	8,281	9,909	11,522
τ_l	4°17'49,9"	5°43'46,5"	7°09'43,1"	8°35'39,7"	10°01'36,3"
ω_l	1°25'56,4"	1°54'34,9"	2°23'13,2"	2°51'51,3"	3°20'29,0"
φ_l	2°51'53,5"	3°49'11,6"	4°46'29,9"	5°43'48,4"	6°41'07,3"
<i>x</i> - 5	0,014	0,010	0,008	0,007	0,006
10	0,111	0,083	0,057	0,036	0,024
15	0,375	0,281	0,225	0,188	0,161
20	0,878	0,668	0,534	0,445	0,381
25		1,298	1,045	0,870	0,745
30			1,804	1,508	1,291
35				2,397	2,056
40					3,078

R	100				
L	40	45	50	60	70
<i>l</i>	39,840	44,773	49,688	59,462	69,147
<i>d</i>	19,973	22,462	24,948	29,910	34,858
<i>∂l</i>	2,659	3,363	4,148	5,962	8,095
ΔR	0,666	0,842	1,039	1,495	2,083
<i>e</i>	13,118	14,693	16,245	19,272	22,178
τ_l	11°27'33,0"	12°53'29,6"	14°19'26,2"	17°11'19,4"	20°03'12,7"
ω_l	3°49'06,3"	4°17'43,2"	4°46'19,6"	5°43'30,7"	6°40'39,1"
φ_l	7°38'26,7"	8°35'46,4"	9°33'06,6"	11°27'48,7"	13°22'33,6"
<i>x</i> - 5	0,005	0,005	0,004	0,003	0,003
10	0,042	0,037	0,033	0,028	0,024
15	0,141	0,125	0,113	0,094	0,080
20	0,334	0,296	0,267	0,222	0,191
25	0,652	0,579	0,521	0,434	0,372
30	1,128	1,002	0,902	0,751	0,643
35	1,796	1,595	1,434	1,194	1,023
40	2,692	2,388	2,144	1,785	1,528
45	3,848	3,415	3,067	2,548	2,180
50		4,709	4,228	3,507	2,998
55			5,662	4,691	4,005
60				6,130	5,223
65				7,854	6,682
70					8,411
75					10,443

R	100				
	80	90	100	110	120
<i>l</i>	78,729	88,195	97,529	106,719	115,751
<i>d</i>	39,788	44,698	49,586	54,450	59,287
<i>y_l</i>	10,545	13,306	16,371	19,735	23,390
ΔR	2,651	3,351	4,130	4,988	5,923
<i>e</i>	24,942	27,546	29,968	32,189	34,189
τ_l	22°55'05,9"	25°46'59,2"	28°38'52,4"	31°30'45,6"	34°22'38,9"
ω_l	7°37'44,6"	8°34'46,4"	9°31'44,3"	10°28'38,5"	11°25'26,1"
φ_l	15°17'21,3"	17°12'12,8"	19°07'08,1"	21°02'07,1"	22°57'12,8"
<i>x</i> - 5	0,003	0,002	0,002	0,002	0,002
10	0,021	0,019	0,017	0,015	0,014
15	0,070	0,063	0,056	0,051	0,047
20	0,167	0,148	0,133	0,121	0,111
25	0,326	0,289	0,260	0,237	0,217
30	0,563	0,500	0,450	0,409	0,375
35	0,894	0,795	0,715	0,650	0,596
40	1,336	1,187	1,068	0,971	0,890
45	1,905	1,692	1,522	1,383	1,268
50	2,619	2,325	2,091	1,900	1,740
55	3,495	3,101	2,788	2,532	2,319
60	4,553	4,037	3,627	3,293	3,016
65	5,816	5,152	4,625	4,197	3,842
70	7,307	6,464	5,798	5,257	4,810
75	9,055	7,996	7,164	6,491	5,935
80	11,093	9,775	8,744	7,915	7,231
85	13,456	11,831	10,563	9,548	8,715
90		14,201	12,649	11,414	10,405
95		16,923	15,036	13,539	12,324
100			17,767	15,956	14,496
105			20,887	18,705	16,953
110				21,836	19,731
115				25,403	22,881
120					26,463
125					30,546

R	100		110		
	130	140	10	20	30
<i>l</i>	124,614	133,294	9,998	19,988	29,944
<i>d</i>	64,095	68,872	5,000	9,997	14,991
<i>y_l</i>	27,328	31,541	0,151	0,606	1,362
ΔR	6,936	8,025	0,038	0,151	0,341
<i>e</i>	85,948	87,447	3,380	6,644	9,925
τ_l	37°14'32,1"	40°06'25,4"	2°36'15,7"	5°12'31,4"	7°48'47,0"
ω_l	12°22'09,2"	13°18'46,4"	0°52'05,2"	1°44'10,0"	2°36'14,2"
φ_l	24°52'22,9"	26°47'39,0"	1°44'10,5"	8°28'21,4"	5°12'32,8"
<i>x</i> - 5	0,002	0,001	0,019	0,009	0,006
10	0,013	0,012	0,152	0,076	0,051
15	0,043	0,040	0,493	0,256	0,171
20	0,103	0,095		0,607	0,404
25	0,200	0,186		1,179	0,791
30	0,346	0,322			1,370
35	0,550	0,511			2,176
40	0,821	0,762			
45	1,170	1,086			
50	1,606	1,491			
55	2,140	1,986			
60	2,781	2,581			
65	3,542	3,287			
70	4,434	4,112			
75	5,468	5,070			
80	6,658	6,170			
85	8,018	7,426			
90	9,565	8,852			
95	11,315	10,463			
100	13,291	12,277			
105	15,516	14,313			
110	18,020	16,597			
115	20,839	19,155			
120	24,020	22,023			
125	27,623	25,246			
130	31,726	28,882			
135		33,011			
140		37,734			

R = 110

R	110				
L	40	50	60	70	80
<i>l</i>	39,868	49,742	59,555	69,295	78,949
<i>d</i>	19,978	24,957	29,926	34,882	39,824
<i>y_l</i>	2,419	3,774	5,426	7,371	9,606
ΔR	0,005	0,045	1,360	1,849	2,413
<i>e</i>	13,155	16,318	19,398	22,378	25,241
τ_l	10°25'02,7"	13°01'18,4"	15°37'34,0"	18°13'40,7"	20°50'05,4"
ω_l	3°28'17,4"	4°20'19,3"	5°12'19,5"	6°04'17,8"	6°56'13,7"
φ_l	6°56'45,3"	8°40'59,1"	10°25'14,5"	12°09'31,9"	13°53'51,7"
<i>x = 5</i>	0,005	0,004	0,003	0,003	0,002
10	0,038	0,030	0,025	0,022	0,019
15	0,128	0,102	0,085	0,073	0,064
20	0,303	0,242	0,202	0,173	0,152
25	0,593	0,474	0,395	0,338	0,296
30	1,025	0,819	0,683	0,585	0,512
35	1,631	1,303	1,085	0,929	0,813
40	2,443	1,949	1,622	1,389	1,214
45	3,489	2,788	2,314	1,980	1,731
50		3,834	3,189	2,722	2,378
55		5,127	4,259	3,634	3,173
60			5,551	4,735	4,131
65			7,102	6,051	5,272
70				7,606	6,616
75				9,426	8,187
80					10,012
85					12,118

112

R = 110

R	110				
L	90	100	110	120	130
<i>l</i>	88,505	97,954	107,282	116,479	125,534
<i>d</i>	44,750	49,658	54,545	59,410	64,251
<i>y_l</i>	12,127	14,929	18,009	21,359	24,974
ΔR	3,050	3,760	4,543	5,397	6,322
<i>e</i>	27,971	30,551	32,964	35,195	37,227
τ_l	23°26'21,1"	26°02'36,7"	28°38'52,4"	31°15'08,1"	33°51'23,8"
ω_l	7°48'07,0"	8°39'57,3"	9°31'44,5"	10°23'27,6"	11°15'06,8"
φ_l	15°38'14,1"	17°22'39,4"	19°07'08,1"	20°51'40,5"	22°36'17,0"
<i>x = 5</i>	0,002	0,002	0,002	0,002	0,001
10	0,017	0,015	0,014	0,013	0,012
15	0,057	0,051	0,046	0,043	0,039
20	0,135	0,121	0,110	0,101	0,093
25	0,263	0,237	0,215	0,197	0,182
30	0,455	0,409	0,372	0,341	0,315
35	0,722	0,650	0,591	0,542	0,500
40	1,079	0,971	0,882	0,809	0,746
45	1,538	1,383	1,257	1,152	1,063
50	2,112	1,900	1,726	1,582	1,459
55	2,816	2,532	2,300	2,107	1,944
60	3,664	3,293	2,990	2,739	2,527
65	4,673	4,197	3,809	3,488	3,217
70	5,858	5,257	4,770	4,366	4,025
75	7,239	6,491	5,885	5,388	4,961
80	8,837	7,915	7,169	6,554	6,038
85	10,677	9,548	8,640	7,892	7,266
90	12,788	11,414	10,315	9,413	8,659
95	15,198	13,539	12,215	11,184	10,233
100		15,956	14,365	13,074	12,003
105		18,696	16,796	15,259	13,990
110			19,544	17,715	16,214
115			22,645	20,477	18,704
120				23,568	21,492
125				27,091	24,619
130					28,135
135					32,093

113

113

R	110		120		
	L	140	150	10	20
<i>l</i>	134,436	143,175	9,998	19,986	29,953
<i>d</i>	69,066	73,853	5,000	9,988	14,992
<i>y_l</i>	28,849	32,976	0,139	0,555	1,249
ΔR	7,318	8,388	0,035	0,139	0,312
<i>e</i>	39,043	40,627	3,331	6,648	9,937
τ_l	36°27'39,4"	39°03'55,1"	2°23'14,4"	4°46'28,7"	7°09'43,1"
ω_l	12°06'41,6"	12°58'11,8"	0°47'44,7"	1°35'29,2"	2°23'13,2"
φ_l	24°20'57,8"	26°05'48,3"	1°35'29,7"	3°10'59,5"	4°46'29,9"
<i>x</i> = 5	0,001	0,001	0,017	0,009	0,006
10	0,011	0,010	0,139	0,069	0,046
15	0,037	0,034	0,452	0,234	0,156
20	0,087	0,081		0,556	0,371
25	0,169	0,158		1,080	0,725
30	0,292	0,273			1,255
35	0,464	0,433			1,992
40	0,693	0,647			
45	0,987	0,921			
50	1,355	1,264			
55	1,805	1,684			
60	2,345	2,188			
65	2,985	2,784			
70	3,734	3,482			
75	4,601	4,290			
80	5,597	5,217			
85	6,732	6,273			
90	8,019	7,468			
95	9,470	8,814			
100	11,099	10,324			
105	12,922	12,010			
110	14,958	13,889			
115	17,229	15,979			
120	19,760	18,300			
125	22,582	20,878			
130	25,735	23,784			
135	29,268	26,931			
140	33,244	30,492			
145		34,489			
150		39,000			

R	120				
	L	40	50	60	70
<i>l</i>	39,889	49,783	59,626	69,407	79,116
<i>d</i>	19,981	24,964	29,988	34,901	39,852
<i>y_l</i>	2,218	3,461	4,978	6,764	8,819
ΔR	0,555	0,867	1,247	1,696	2,213
<i>e</i>	13,183	16,374	19,494	22,531	25,469
τ_l	9°32'57,5"	11°56'11,8"	14°19'26,2"	16°42'40,6"	19°05'54,9"
ω_l	3°10'56,4"	3°58'38,7"	4°46'19,6"	5°33'59,0"	6°21'36,7"
φ_l	6°22'01,1"	7°57'33,1"	9°33'06,6"	11°08'41,6"	12°44'18,2"
<i>x</i> = 5	0,004	0,003	0,003	0,002	0,002
10	0,035	0,028	0,023	0,020	0,017
15	0,117	<u>0,094</u>	0,078	0,067	0,059
20	0,278	<u>0,222</u>	0,185	0,159	0,139
25	0,543	0,434	0,362	0,310	0,271
30	0,939	0,751	0,626	0,536	0,469
35	1,494	<u>1,194</u>	0,994	0,852	0,745
40	2,237	1,785	1,486	1,272	1,113
45	3,192	2,548	2,119	1,814	1,586
50		3,507	2,914	2,493	2,179
55		4,687	3,891	3,326	2,905
60			5,074	4,332	3,781
65			6,484	5,530	4,822
70				6,944	6,017
75				8,594	7,475
80					9,129
85					11,030

R	120				
L	90	100	110	120	130
l	88,743	98,278	107,712	117,035	126,237
d	44,790	49,712	54,617	59,508	64,369
y_l	11,138	13,718	16,555	19,646	22,985
ΔR	2,798	3,451	4,170	4,956	5,807
e	28,295	30,995	33,555	35,961	38,200
τ_l	21°29'09,3"	23°52'23,7"	26°15'38,0"	28°38'52,4"	31°02'06,8"
ω_l	7°09'12,3"	7°56'45,6"	8°44'18,4"	9°31'44,3"	10°19'09,1"
φ_l	14°19'57,0"	15°55'38,1"	17°31'21,6"	19°07'08,1"	20°42'57,7"
$x = 5$	0,002	0,002	0,002	0,001	0,001
10	0,015	0,014	0,013	0,012	0,011
15	0,052	0,047	0,043	0,039	0,036
20	0,123	0,111	0,101	0,093	0,085
25	0,241	0,217	0,197	0,181	0,167
30	0,417	0,375	0,341	0,313	0,289
35	0,662	0,596	0,542	0,496	0,458
40	0,989	0,890	0,809	0,741	0,684
45	1,409	1,268	1,152	1,056	0,974
50	1,935	1,740	1,582	1,449	1,337
55	2,579	2,319	2,107	1,931	1,781
60	3,355	3,016	2,739	2,509	2,315
65	4,276	3,842	3,488	3,194	2,946
70	5,357	4,810	4,366	3,997	3,685
75	6,615	5,935	5,383	4,926	4,541
80	8,067	7,231	6,554	5,995	5,524
85	9,735	8,715	7,892	7,214	6,644
90	11,641	10,405	9,413	8,597	7,913
95	13,808	12,324	11,134	10,158	9,343
100		14,496	13,074	11,915	10,949
105		16,946	15,259	13,885	12,746
110			17,715	16,091	14,751
115			20,469	18,559	16,987
120				21,321	19,476
125				24,406	22,250
130					25,345
135					28,795

R	120		130		
L	140	150	10	20	30
l	133,311	144,246	9,999	19,988	29,960
d	69,213	74,034	5,000	9,998	14,993
y_l	26,568	30,389	0,128	0,513	1,153
ΔR	6,723	7,704	0,032	0,128	0,288
e	40,258	42,120	3,331	6,651	9,946
τ_l	33°25'21,1"	35°48'35,5"	2°12'13,3"	4°24'26,5"	6°36'39,8"
ω_l	11°06'30,5"	11°53'48,4"	0°44'04,4"	1°28'08,6"	2°12'12,4"
φ_l	22°18'50,5"	23°54'47,1"	1°28'08,9"	2°56'17,9"	4°24'27,4"
$x = 5$	0,001	0,001	0,016	0,008	0,005
10	0,010	0,009	0,128	0,064	0,043
15	0,033	0,031	0,417	0,216	0,144
20	0,079	0,074		0,514	0,342
25	0,155	0,145		0,997	0,669
30	0,268	0,250			1,157
35	0,425	0,397			1,837
40	0,635	0,593			
45	0,905	0,844			
50	1,242	1,159			
55	1,654	1,543			
60	2,149	2,005			
65	2,734	2,551			
70	3,420	3,190			
75	4,212	3,928			
80	5,122	4,776			
85	6,158	5,740			
90	7,331	6,830			
95	8,651	8,057			
100	10,131	9,429			
105	11,784	10,960			
110	13,625	12,662			
115	15,670	14,550			
120	17,941	16,640			
125	20,460	18,950			
130	23,256	21,505			
135	26,363	24,331			
140	29,826	27,461			
145	33,684	30,938			
150		34,811			

R	130				
L	40	50	60	70	80
<i>l</i>	39,905	49,815	59,681	69,494	79,246
<i>d</i>	19,984	24,969	29,947	34,916	39,874
<i>y_l</i>	2,048	3,197	4,598	6,250	8,150
ΔR	0,512	0,800	1,152	1,566	2,044
<i>e</i>	13,206	16,417	19,569	22,649	25,646
τ_l	8°48'53,1"	11°01'06,3"	13°13'19,6"	15°25'32,8"	17°37'46,1"
ω_l	2°56'15,6"	3°40'18,0"	4°24'19,4"	5°08'19,6"	5°52'18,4"
φ_l	5°52'37,5"	7°20'48,3"	8°49'00,2"	10°17'13,2"	11°45'27,7"
<i>x</i> = 5	0,004	0,003	0,003	0,002	0,002
10	0,032	0,026	0,021	0,018	0,016
15	0,108	0,087	0,072	0,062	0,054
20	0,256	0,205	0,171	0,147	0,128
25	0,501	0,401	0,334	0,286	0,250
30	0,867	0,693	0,577	0,495	0,433
35	1,379	1,102	0,917	0,786	0,688
40	2,063	1,647	1,371	1,174	1,027
45	2,942	2,350	1,955	1,674	1,464
50		3,233	2,687	2,299	2,010
55		4,316	3,586	3,067	2,679
60			4,673	3,992	3,486
65			5,967	5,094	4,443
70				6,390	5,569
75				7,901	6,878
80					8,392
85					10,128

R	130				
L	90	100	110	120	130
<i>l</i>	88,928	98,531	108,047	117,469	126,787
<i>d</i>	44,821	49,754	54,678	59,577	64,462
<i>y_l</i>	10,296	12,686	15,316	18,188	21,283
ΔR	2,585	3,188	3,854	4,580	5,369
<i>e</i>	28,547	31,340	34,014	36,558	38,958
τ_l	19°49'59,4"	22°02'12,6"	24°14'25,9"	26°26'39,1"	28°38'52,4"
ω_l	6°36'15,6"	7°20'11,0"	8°04'04,4"	8°47'55,5"	9°31'44,3"
φ_l	13°13'43,8"	14°42'01,6"	16°10'21,5"	17°38'43,6"	19°07'08,1"
<i>x</i> = 5	0,002	0,002	0,001	0,001	0,001
10	0,014	0,013	0,012	0,011	0,010
15	0,048	0,043	0,039	0,036	0,033
20	0,114	0,103	0,093	0,085	0,079
25	0,223	0,200	0,182	0,167	0,154
30	0,385	0,346	0,315	0,289	0,266
35	0,611	0,550	0,500	0,458	0,423
40	0,918	0,821	0,746	0,684	0,631
45	1,300	1,170	1,063	0,974	0,899
50	1,785	1,608	1,459	1,337	1,234
55	2,379	2,140	1,944	1,781	1,644
60	3,094	2,781	2,527	2,315	2,136
65	3,942	3,542	3,217	2,946	2,718
70	4,936	4,434	4,025	3,685	3,399
75	6,091	5,468	4,961	4,541	4,187
80	7,423	6,658	6,088	5,524	5,091
85	8,949	8,018	7,266	6,644	6,121
90	10,688	9,565	8,659	7,913	7,287
95	12,660	11,315	10,233	9,343	8,599
100		13,291	12,003	10,949	10,069
105		15,511	13,990	12,746	11,711
110			16,215	14,751	13,539
115			18,699	16,987	15,570
120				19,476	17,824
125				22,242	20,324
130					23,098
135					26,170

R = 130, 140

R	130		140		
	140	150	10	20	30
<i>l</i>	135,995	145,084	9,999	19,990	29,966
<i>d</i>	69,329	74,176	5,000	9,998	14,994
<i>y_l</i>	24,613	28,168	0,119	0,476	1,071
ΔR	6,217	7,126	0,030	0,119	0,268
<i>e</i>	41,204	43,283	3,332	6,653	9,954
τ_l	30°51'05,6"	33°03'18,9"	2°02'46,6"	4°05'33,2"	6°08'19,8"
ω_l	10°15'30,4"	10°59'13,6"	0°40'55,5"	1°21'50,9"	2°02'45,9"
ϵ_l	20°35'35,2"	22°04'05,3"	1°21'51,1"	2°43'42,3"	4°05'33,9"
<i>x</i> = 5	0,001	0,001	0,015	0,008	0,005
10	0,009	0,009	0,119	0,060	0,040
15	0,031	0,029	0,387	0,201	0,134
20	0,073	0,068		0,477	0,318
25	0,143	0,134		0,925	0,621
30	0,247	0,231			1,074
35	0,393	0,367			1,705
40	0,586	0,547			
45	0,835	0,779			
50	1,146	1,069			
55	1,526	1,424			
60	1,982	1,850			
65	2,523	2,354			
70	3,154	2,942			
75	3,885	3,623			
80	4,722	4,403			
85	5,676	5,291			
90	6,753	6,294			
95	7,965	7,420			
100	9,322	8,680			
105	10,835	10,083			
110	12,516	11,640			
115	14,379	13,363			
120	16,442	15,265			
125	18,721	17,363			
130	21,240	19,674			
135	24,024	22,218			
140	27,105	25,021			
145	30,511	28,113			
150		31,529			
155		35,306			

R = 140

R	140				
	40	50	60	70	80
<i>l</i>	39,918	49,841	59,725	69,564	79,349
<i>d</i>	19,986	24,973	29,954	34,927	39,891
<i>y_l</i>	1,902	2,969	4,272	5,807	7,575
ΔR	0,476	0,743	1,070	1,455	1,899
<i>e</i>	13,223	16,452	19,628	22,743	25,786
τ_l	3°11'06,4"	10°13'53,0"	12°16'39,6"	14°19'26,2"	16°22'12,8"
ω_l	2°43'40,4"	3°24'34,4"	4°05'27,5"	4°46'19,6"	5°27'10,7"
ϵ_l	5°27'26,0"	6°49'18,6"	8°11'12,1"	9°33'06,6"	10°55'02,1"
<i>x</i> = 5	0,004	0,003	0,002	0,002	0,002
10	0,030	0,024	0,020	0,017	0,015
15	0,100	0,080	0,067	0,057	0,050
20	0,238	0,191	0,159	0,136	0,119
25	0,465	0,372	0,310	0,266	0,233
30	0,805	0,643	0,536	0,459	0,402
35	1,280	1,023	0,852	0,730	0,638
40	1,914	1,528	1,272	1,090	0,953
45	2,729	2,180	1,814	1,554	1,359
50		2,998	2,493	2,134	1,865
55		4,001	3,326	2,845	2,486
60			4,332	3,702	3,234
65			5,527	4,721	4,121
70				5,920	5,161
75				7,313	6,371
80					7,768
85					9,366

R	140				
L	90	100	110	120	130
<i>l</i>	89,075	98,732	108,314	117,815	127,226
<i>d</i>	44,845	49,788	54,718	59,635	64,536
<i>y_l</i>	9,572	11,797	14,247	16,919	19,811
ΔR	2,402	2,963	3,581	4,258	4,991
<i>e</i>	28,747	31,614	34,379	37,081	39,560
τ_l	18°24'59,4"	20°27'46,0"	22°30'32,6"	24°33'19,2"	26°36'05,8"
ω_l	6°08'00,4"	6°48'48,7"	7°29'35,4"	8°10'20,4"	8°51'03,4"
φ_l	12°16'59,0"	13°38'57,3"	15°00'57,2"	16°22'58,8"	17°45'02,4"
<i>x</i> = 5	0,002	0,001	0,001	0,001	0,001
10	0,013	0,012	0,011	0,010	0,009
15	0,045	0,040	0,037	0,033	0,031
20	0,106	0,095	0,087	0,079	0,073
25	0,207	0,186	0,169	0,155	0,143
30	0,357	0,322	0,292	0,268	0,247
35	0,567	0,511	0,464	0,425	0,393
40	0,847	0,762	0,693	0,635	0,586
45	1,207	1,086	0,987	0,905	0,835
50	1,657	1,491	1,355	1,242	1,146
55	2,208	1,986	1,805	1,654	1,526
60	2,871	2,581	2,345	2,149	1,982
65	3,656	3,287	2,985	2,734	2,523
70	4,577	4,112	3,734	3,420	3,154
75	5,646	5,070	4,601	4,212	3,885
80	6,876	6,170	5,597	5,122	4,722
85	8,283	7,426	6,732	6,158	5,676
90	9,884	8,852	8,019	7,331	6,753
95	11,694	10,463	9,470	8,651	7,965
100		12,277	11,099	10,131	9,322
105		14,310	12,922	11,784	10,835
110			14,958	13,625	12,516
115			17,224	15,670	14,379
120				17,940	16,442
125				20,454	18,721
130					21,240
135					24,017

R	140		150		
L	140	150	10	20	30
<i>l</i>	136,540	145,752	9,999	19,991	29,970
<i>d</i>	69,421	74,288	5,000	9,999	14,995
<i>y_l</i>	22,920	26,242	0,111	0,444	0,999
ΔR	5,782	6,628	0,028	0,111	0,250
<i>e</i>	41,955	44,206	3,332	6,655	9,960
τ_l	28°38'52,4"	30°41'39,0"	1°54'35,5"	3°49'11,0"	5°43'46,5"
ω_l	9°31'44,3"	10°12'22,9"	0°38'11,8"	1°16'23,5"	1°54'34,9"
φ_l	19°07'08,1"	20°29'16,1"	1°16'23,7"	2°32'47,5"	3°49'11,6"
<i>x</i> = 5	0,001	0,001	0,014	0,007	0,005
10	0,009	0,008	0,111	0,056	0,037
15	0,029	0,027	0,361	0,188	0,125
20	0,068	0,063		0,445	0,296
25	0,133	0,124		0,863	0,579
30	0,230	0,214			1,002
35	0,365	0,340			1,590
40	0,544	0,508			
45	0,775	0,724			
50	1,064	0,998			
55	1,417	1,322			
60	1,840	1,717			
65	2,341	2,185			
70	2,927	2,731			
75	3,604	3,362			
80	4,381	4,065			
85	5,263	4,907			
90	6,261	5,836			
95	7,381	6,878			
100	8,634	8,042			
105	10,029	9,338			
110	11,578	10,773			
115	13,291	12,359			
120	15,182	14,107			
125	17,267	16,039			
130	19,563	18,143			
135	22,091	20,461			
140	24,874	23,005			
145	27,935	25,798			
150		28,867			
155		32,236			

R	150				
L	40	50	60	70	80
D	39,929	49,861	59,760	69,620	79,433
d	19,988	24,977	29,960	34,937	39,905
Y_t	1,776	2,772	3,989	5,423	7,075
ΔR	0,444	0,694	0,999	1,358	1,773
e	13,237	16,479	19,676	22,819	25,900
τ_l	7°38'22,0"	9°32'57,5"	11°27'33,0"	13°22'08,5"	15°16'44,0"
ω_l	2°32'45,9"	3°10'56,4"	3°49'06,3"	4°27'15,4"	5°05'23,6"
φ_l	5°05'36,1"	6°22'01,1"	7°38'26,7"	8°54'53,1"	10°11'20,4"
$x = 5$	0,003	0,003	0,002	0,002	0,002
10	0,028	0,022	0,019	0,016	0,014
15	0,094	0,075	0,063	0,054	0,047
20	0,222	0,178	0,148	0,127	0,111
25	0,434	0,347	0,289	0,248	0,217
30	0,751	0,600	0,500	0,429	0,375
35	1,194	0,954	0,795	0,681	0,596
40	1,785	1,426	1,187	1,017	0,890
45	2,544	2,054	1,692	1,450	1,268
50		2,796	2,325	1,991	1,740
55		3,729	3,101	2,654	2,319
60			4,037	3,452	3,016
65			5,149	4,400	3,842
70				5,514	4,810
75				6,808	5,935
80					7,231
85					8,712

R	150				
L	90	100	110	120	130
D	89,193	98,895	108,530	118,094	127,580
d	44,865	49,815	54,754	59,681	64,595
Y_t	8,942	11,023	13,316	15,818	18,527
ΔR	2,243	2,767	3,345	3,977	4,663
e	28,908	31,836	34,674	37,413	40,045
τ_l	17°11'19,4"	19°05'54,9"	21°00'30,4"	22°55'05,9"	24°49'41,4"
ω_l	5°43'30,7"	6°21'36,7"	6°59'41,4"	7°37'44,6"	8°15'46,2"
φ_l	11°27'48,7"	12°44'18,2"	14°00'49,0"	15°17'21,3"	16°33'55,2"
$x = 5$	0,002	0,001	0,001	0,001	0,001
10	0,012	0,011	0,010	0,009	0,009
15	0,042	0,038	0,034	0,031	0,029
20	0,099	0,089	0,081	0,074	0,068
25	0,193	0,174	0,158	0,145	0,134
30	0,333	0,300	0,273	0,250	0,231
35	0,529	0,476	0,433	0,397	0,367
40	0,791	0,712	0,647	0,593	0,547
45	1,126	1,014	0,921	0,844	0,779
50	1,546	1,391	1,264	1,159	1,069
55	2,060	1,853	1,684	1,543	1,424
60	2,678	2,408	2,188	2,005	1,850
65	3,410	3,065	2,784	2,551	2,354
70	4,267	3,835	3,482	3,190	2,942
75	5,261	4,726	4,290	3,928	3,628
80	6,405	5,749	5,217	4,776	4,408
85	7,711	6,917	6,278	5,740	5,291
90	9,194	8,240	7,468	6,830	6,294
95	10,869	9,733	8,814	8,057	7,420
100		11,411	10,324	9,429	8,680
105		13,287	12,010	10,960	10,083
110			13,889	12,662	11,640
115			15,975	14,550	13,363
120				16,640	15,265
125				18,946	17,363
130					19,674
135					22,213

R	150		160		
	L	140	150	10	20
<i>l</i>	136,982	146,208	9,999	19,992	29,974
<i>d</i>	69,495	74,379	5,000	9,999	14,996
<i>y_l</i>	21,441	24,557	0,104	0,417	0,937
ΔB	5,402	6,194	0,026	0,104	0,234
<i>e</i>	42,561	44,951	3,332	6,656	9,964
τ_l	26°44'16,9"	28°38'52,4"	1°47'25,3"	3°34'51,6"	5°22'17,3"
ω_l	8°58'46,2"	9°31'44,3"	0°35'48,6"	1°11'37,0"	1°47'25,3"
ϕ_l	17°50'30,7"	19°07'08,1"	1°11'37,2"	2°28'14,6"	3°34'52,0"
<i>x = 5</i>	0,001	0,001	0,013	0,007	0,004
10	0,008	0,007	0,104	0,052	0,035
15	0,027	0,025	0,339	0,176	0,117
20	0,063	0,059		0,417	0,278
25	0,124	0,116		0,809	0,543
30	0,214	0,209			0,939
35	0,340	0,318			1,490
40	0,508	0,474			
45	0,724	0,675			
50	0,993	0,927			
55	1,322	1,234			
60	1,717	1,602			
65	2,185	2,038			
70	2,731	2,548			
75	3,362	3,136			
80	4,085	3,810			
85	4,907	4,576			
90	5,834	5,441			
95	6,878	6,411			
100	8,042	7,493			
105	9,338	8,696			
110	10,773	10,029			
115	12,359	11,499			
120	14,107	13,117			
125	16,030	14,893			
130	18,143	16,841			
135	20,461	18,974			
140	23,005	21,307			
145	25,791	23,859			
150		26,651			
155		29,702			

R	160				
	L	40	50	60	70
<i>l</i>	39,938	49,878	59,789	69,666	79,501
<i>d</i>	19,990	24,980	29,965	34,944	39,917
<i>y_l</i>	1,665	2,600	3,741	5,087	6,637
ΔB	0,416	0,651	0,936	1,274	1,663
<i>e</i>	13,249	16,502	19,715	22,882	25,992
τ_l	7°09'43,1"	8°57'08,9"	10°44'34,7"	12°32'00,4"	14°19'26,2"
ω_l	2°23'13,2"	2°59'00,7"	3°34'47,7"	4°10'34,1"	4°46'19,6"
ϕ_l	4°46'29,9"	5°58'08,2"	7°09'47,0"	8°21'26,3"	9°33'06,6"
<i>x = 5</i>	0,003	0,003	0,002	0,002	0,002
10	0,026	0,021	0,017	0,015	0,013
15	0,088	0,070	0,059	0,050	0,044
20	0,208	0,167	0,139	0,119	0,104
25	0,407	0,326	0,271	0,233	0,203
30	0,704	0,563	0,469	0,402	0,352
35	1,119	0,894	0,745	0,638	0,559
40	1,673	1,336	1,113	0,953	0,834
45	2,383	1,905	1,586	1,359	1,188
50		2,619	2,179	1,865	1,631
55		3,492	2,905	2,486	2,173
60			3,781	3,234	2,825
65			4,819	4,121	3,598
70				5,161	4,504
75				6,369	5,555
80					6,765
85					8,146

R = 160

R	160				
	L	90	100	110	120
<i>l</i>	89,291	99,028	108,707	118,323	127,871
<i>d</i>	44,882	49,838	54,784	59,720	64,644
<i>yl</i>	8,390	10,344	12,498	14,850	17,398
ΔR	2,103	2,595	3,188	3,731	4,375
<i>e</i>	29,040	32,017	34,915	37,726	40,443
τ_l	16°06'32,0"	17°54'17,8"	19°41'48,5"	21°29'09,3"	23°16'35,1"
ω_l	5°22'04,5"	5°57'47,2"	6°33'30,8"	7°09'12,3"	7°44'52,5"
φ_l	10°44'47,5"	11°56'30,0"	13°08'12,7"	14°19'57,0"	15°31'42,6"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,012	0,010	0,009	0,009	0,008
15	0,039	0,035	0,032	0,029	0,027
20	0,093	0,083	0,076	0,069	0,064
25	0,181	0,163	0,148	0,136	0,125
30	0,313	0,281	0,256	0,234	0,216
35	0,496	0,447	0,406	0,372	0,344
40	0,741	0,667	0,606	0,556	0,513
45	1,056	0,950	0,864	0,792	0,731
50	1,449	1,304	1,185	1,086	1,002
55	1,931	1,737	1,578	1,446	1,335
60	2,509	2,257	2,050	1,879	1,734
65	3,194	2,872	2,609	2,391	2,206
70	3,997	3,592	3,263	2,989	2,757
75	4,926	4,426	4,019	3,680	3,395
80	5,995	5,383	4,886	4,473	4,125
85	7,214	6,474	5,873	5,375	4,955
90	8,597	7,709	6,989	6,394	5,893
95	10,155	9,100	8,245	7,539	6,946
100		10,662	9,652	8,820	8,122
105		12,405	11,222	10,247	9,430
110			12,967	11,830	10,881
115			14,901	13,584	12,484
120				15,521	14,251
125				17,654	16,195
130					18,332
135					20,674

128

R = 160, 170

R	160		170			
	L	140	150	10	20	30
<i>l</i>	137,344	146,737	156,130	9,999	19,993	29,977
<i>d</i>	69,556	74,454	79,352	5,000	9,999	14,996
<i>yl</i>	20,139	28,072	36,005	0,098	0,392	0,882
ΔR	5,069	5,814	6,559	0,024	0,099	0,221
<i>e</i>	43,057	45,562	48,067	3,332	6,657	9,968
τ_l	25°04'00,9"	26°51'26,0"	28°38'51,1"	1°41'06,6"	3°22'13,2"	5°03'19,8"
ω_l	8°20'31,3"	8°56'08,6"	9°31'45,9"	0°33'42,2"	1°07'24,3"	1°41'06,2"
φ_l	16°43'29,6"	17°55'18,0"	19°07'06,4"	1°07'24,4"	2°14'48,9"	3°22'13,6"
<i>x</i> = 5	0,001	0,001	0,001	0,012	0,006	0,004
10	0,007	0,007	0,007	0,098	0,049	0,033
15	0,025	0,023	0,023	0,319	0,165	0,110
20	0,060	0,056	0,056		0,393	0,262
25	0,116	0,109	0,109		0,762	0,511
30	0,201	0,188	0,188			0,884
35	0,319	0,298	0,298			1,402
40	0,476	0,445	0,445			
45	0,678	0,633	0,633			
50	0,931	0,869	0,869			
55	1,239	1,156	1,156			
60	1,610	1,502	1,502			
65	2,048	1,911	1,911			
70	2,559	2,388	2,388			
75	3,150	2,939	2,939			
80	3,827	3,570	3,570			
85	4,597	4,287	4,287			
90	5,465	5,096	5,096			
95	6,440	6,003	6,003			
100	7,527	7,015	7,015			
105	8,736	8,139	8,139			
110	10,075	9,382	9,382			
115	11,552	10,752	10,752			
120	13,178	12,259	12,259			
125	14,964	13,911	13,911			
130	16,922	15,720	15,720			
135	19,066	17,695	17,695			
140	21,411	19,852	19,852			
145	23,973	22,206	22,206			
150		24,772	24,772			
155		27,566	27,566			

129

R	170				
	L	40	50	60	70
<i>l</i>	39,945	49,892	59,813	69,704	79,558
<i>d</i>	19,991	24,982	29,969	34,951	39,928
<i>y_l</i>	1,567	2,447	3,522	4,789	6,250
ΔR	0,392	0,612	0,881	1,199	1,566
<i>e</i>	13,259	16,521	19,748	22,933	26,069
τ_l	6°44'26,5"	8°25'33,1"	10°06'39,7"	11°47'46,3"	13°28'52,9"
ω_l	2°14'47,9"	2°48'29,2"	3°22'10,0"	3°55'50,3"	4°29'30,0"
φ_l	4°29'38,6"	5°37'03,9"	6°44'29,7"	7°51'56,0"	8°59'22,9"
<i>x</i> = 5	0,003	0,002	0,002	0,002	0,002
10	0,025	0,020	0,016	0,014	0,012
15	0,083	0,066	0,055	0,047	0,041
20	0,196	0,157	0,131	0,112	0,098
25	0,383	0,306	0,255	0,219	0,192
30	0,662	0,530	0,441	0,378	0,331
35	1,053	0,842	0,701	0,601	0,526
40	1,574	1,257	1,047	0,897	0,785
45	2,242	1,793	1,492	1,278	1,118
50		2,463	2,050	1,755	1,535
55		3,284	2,732	2,339	2,045
60			3,555	3,041	2,658
65			4,530	3,874	3,384
70				4,851	4,235
75				5,984	5,222
80					6,356
85					7,650

R	170				
	L	90	100	110	120
<i>l</i>	39,371	99,138	108,854	118,514	128,112
<i>d</i>	44,895	49,856	54,809	59,752	64,685
<i>y_l</i>	7,902	9,744	11,774	13,993	16,396
ΔR	1,980	2,443	2,955	3,514	4,121
<i>e</i>	29,150	32,167	35,115	37,985	40,773
τ_l	15°09'59,5"	16°51'06,1"	18°32'12,7"	20°13'19,3"	21°54'26,0"
ω_l	5°03'09,1"	5°36'47,2"	6°10'24,5"	6°44'00,8"	7°17'36,0"
φ_l	10°06'50,4"	11°14'18,9"	12°21'48,2"	13°29'18,5"	14°36'50,0"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,011	0,010	0,009	0,008	0,008
15	0,037	0,033	0,030	0,028	0,025
20	0,087	0,078	0,071	0,065	0,060
25	0,170	0,153	0,139	0,128	0,118
30	0,294	0,265	0,241	0,221	0,204
35	0,467	0,420	0,382	0,350	0,323
40	0,698	0,628	0,571	0,523	0,483
45	0,994	0,894	0,813	0,745	0,688
50	1,364	1,227	1,115	1,022	0,943
55	1,816	1,634	1,485	1,361	1,256
60	2,360	2,123	1,929	1,768	1,631
65	3,005	2,702	2,455	2,249	2,075
70	3,759	3,379	3,069	2,812	2,594
75	4,632	4,162	3,780	3,462	3,193
80	5,634	5,061	4,594	4,217	3,880
85	6,778	6,084	5,521	5,054	4,660
90	8,073	7,243	6,569	6,011	5,541
95	9,532	8,546	7,746	7,085	6,529
100		10,007	9,064	8,286	7,632
105		11,636	10,532	9,622	8,859
110			12,163	11,103	10,217
115			13,967	12,741	11,716
120				14,548	13,367
125				16,534	15,181
130					17,169
135					19,344

R = 170, 180

R	170		180		
	140	150	10	20	30
l	137,045	147,107	9,999	19,994	29,979
d	69,606	74,516	5,000	9,999	14,997
y_l	18,984	21,754	0,093	0,370	0,833
ΔR	4,775	5,477	0,023	0,093	0,208
e	43,469	46,068	3,332	6,658	9,972
τ_l	23°35'32,6"	25°16'39,2"	1°35'29,6"	3°10'59,2"	4°46'28,7"
ω_l	7°51'10,0"	8°24'42,8"	0°31'49,9"	1°03'39,6"	1°35'29,2"
φ_l	15°44'22,0"	16°51'56,4"	1°03'39,7"	2°07'19,6"	3°10'59,5"
$x = 5$	0,001	0,001	0,012	0,006	0,004
10	0,007	0,007	0,093	0,046	0,031
15	0,024	0,022	0,301	0,156	0,104
20	0,056	0,052		0,371	0,247
25	0,109	0,102		0,719	0,483
30	0,189	0,176			0,835
35	0,300	0,280			1,323
40	0,448	0,418			
45	0,638	0,596			
50	0,876	0,817			
55	1,166	1,088			
60	1,515	1,413			
65	1,927	1,798			
70	2,408	2,247			
75	2,964	2,765			
80	3,600	3,359			
85	4,324	4,032			
90	5,139	4,793			
95	6,054	5,645			
100	7,075	6,595			
105	8,209	7,649			
110	9,463	8,815			
115	10,846	10,099			
120	12,367	11,509			
125	14,034	13,054			
130	15,860	14,742			
135	17,855	16,584			
140	20,034	18,592			
145	22,468	20,777			
150		23,154			
155		25,736			

132

R = 180

R	180				
	40	50	60	70	80
l	39,951	49,904	59,834	69,736	79,606
d	19,992	24,984	29,972	34,956	39,934
y_l	1,480	2,312	3,327	4,525	5,905
ΔR	0,370	0,578	0,833	1,133	1,479
e	13,267	16,537	19,775	22,976	26,134
τ_l	6°21'58,3"	7°57'27,9"	9°32'57,5"	11°08'27,0"	12°43'56,6"
ω_l	2°07'18,6"	2°39'07,7"	3°10'56,4"	3°42'44,7"	4°14'32,5"
φ_l	4°14'39,7"	5°18'20,2"	6°22'01,1"	7°25'42,3"	8°29'24,1"
$x = 5$	0,003	0,002	0,002	0,002	0,001
10	0,023	0,019	0,015	0,013	0,012
15	0,078	0,063	0,052	0,045	0,039
20	0,185	0,148	0,123	0,106	0,093
25	0,362	0,289	0,241	0,207	0,181
30	0,626	0,500	0,417	0,357	0,313
35	0,994	0,795	0,662	0,567	0,496
40	1,486	1,187	0,989	0,847	0,741
45	2,116	1,692	1,409	1,207	1,056
50		2,325	1,935	1,657	1,449
55		3,099	2,579	2,208	1,931
60			3,355	2,871	2,509
65			4,274	3,656	3,194
70				4,577	3,997
75				5,643	4,926
80					5,995
85					7,212

133

R	180				
L	90	100	110	120	130
<i>l</i>	89,439	99,231	108,977	118,674	128,315
<i>d</i>	44,906	49,872	54,829	59,778	64,718
<i>yl</i>	7,467	9,208	11,129	13,228	15,503
ΔR	1,871	2,308	2,792	3,320	3,894
<i>e</i>	29,242	32,293	35,282	38,203	41,049
τ_l	14°19'26,2"	15°54'55,8"	17°30'25,4"	19°05'54,9"	20°41'24,5"
ω_l	4°46'19,6"	5°18'06,1"	5°49'51,8"	6°21'36,7"	6°53'20,7"
ζ_l	9°33'06,6"	10°36'49,7"	11°40'33,0"	12°44'18,2"	13°48'03,8"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,010	0,009	0,008	0,008	0,007
15	0,035	0,031	0,028	0,026	0,024
20	0,082	0,074	0,067	0,062	0,057
25	0,161	0,145	0,132	0,121	0,111
30	0,278	0,250	0,227	0,208	0,192
35	0,441	0,397	0,361	0,331	0,305
40	0,659	0,593	0,539	0,494	0,456
45	0,938	0,844	0,768	0,703	0,649
50	1,288	1,159	1,053	0,965	0,891
55	1,715	1,543	1,402	1,285	1,186
60	2,229	2,005	1,822	1,669	1,541
65	2,836	2,551	2,318	2,124	1,960
70	3,547	3,190	2,897	2,654	2,449
75	4,371	3,928	3,568	3,268	3,015
80	5,315	4,776	4,336	3,971	3,662
85	6,392	5,740	5,209	4,769	4,398
90	7,611	6,830	6,196	5,671	5,228
95	8,982	8,057	7,305	6,683	6,160
100		9,429	8,544	7,813	7,199
105		10,958	9,924	9,070	8,353
110			11,455	10,462	9,630
115			13,147	12,000	11,039
120				13,693	12,588
125				15,552	14,288
130					16,149
135					18,182

R	180		190		
L	140	150	10	20	30
<i>l</i>	137,897	147,417	9,999	19,994	29,981
<i>d</i>	69,649	74,568	5,000	9,999	14,997
<i>yl</i>	17,953	20,576	0,088	0,351	0,789
ΔR	4,513	5,176	0,022	0,088	0,197
<i>e</i>	43,814	46,492	3,332	6,659	9,975
τ_l	22°16'54,1"	23°52'23,7"	1°30'28,0"	3°00'56,0"	4°31'24,1"
ω_l	7°25'03,7"	7°56'45,6"	0°30'09,3"	1°00'18,6"	1°30'27,7"
ζ_l	14°51'50,4"	15°55'38,1"	1°00'18,7"	2°00'37,4"	3°00'56,4"
<i>x</i> = 5	0,001	0,001	0,011	0,005	0,004
10	0,007	0,006	0,088	0,044	0,029
15	0,022	0,021	0,285	0,148	0,099
20	0,053	0,049		0,351	0,284
25	0,103	0,096		0,681	0,457
30	0,179	0,167			0,791
35	0,284	0,265			1,253
40	0,423	0,395			
45	0,603	0,563			
50	0,827	0,772			
55	1,101	1,028			
60	1,430	1,335			
65	1,819	1,698			
70	2,273	2,121			
75	2,798	2,611			
80	3,399	3,171			
85	4,081	3,807			
90	4,850	4,523			
95	5,713	5,327			
100	6,675	6,222			
105	7,742	7,215			
110	8,922	8,313			
115	10,223	9,521			
120	11,651	10,847			
125	13,216	12,298			
130	14,927	13,882			
135	16,795	15,608			
140	18,830	17,487			
145	21,043	19,528			
150		21,744			
155		24,146			

R	190				
L	40	50	60	70	80
I	39,950	49,914	59,851	69,763	79,646
d	19,993	24,986	29,975	34,960	39,941
\bar{y}_t	1,402	2,190	3,152	4,288	5,596
$\Delta \bar{y}$	0,351	0,548	0,789	1,073	1,401
e	13,274	16,550	19,798	23,018	26,188
τ_t	6°01'52,1"	7°32'20,1"	9°02'48,1"	10°33'16,1"	12°03'44,2"
ω_t	2°00'36,7"	2°30'45,4"	3°00'53,8"	3°31'01,7"	4°01'09,3"
φ_t	4°01'15,4"	5°01'34,7"	6°01'54,3"	7°02'14,4"	8°02'34,9"
x = 5	0,003	0,002	0,002	0,002	0,001
10	0,022	0,018	0,015	0,013	0,011
15	0,074	0,059	0,049	0,042	0,037
20	0,175	0,140	0,117	0,100	0,088
25	0,343	0,274	0,228	0,196	0,171
30	0,593	0,474	0,395	0,338	0,296
35	0,942	0,753	0,627	0,538	0,470
40	1,407	1,125	0,937	0,803	0,702
45	2,004	1,603	1,335	1,143	1,000
50		2,202	1,833	1,570	1,373
55		2,934	2,442	2,091	1,828
60			3,176	2,718	2,376
65			4,045	3,462	3,025
70				4,332	3,784
75				5,340	4,663
80					5,672
85					6,822

R	190				
L	90	100	110	120	130
I	89,496	99,310	109,082	118,809	128,487
d	44,916	49,885	54,847	59,801	64,747
\bar{y}_t	7,077	8,729	10,551	12,542	14,701
$\Delta \bar{y}$	1,773	2,188	2,646	3,147	3,691
e	29,319	32,400	35,424	38,387	41,283
τ_t	13°34'12,2"	15°04'40,2"	16°35'08,2"	18°05'36,3"	19°36'04,3"
ω_t	4°31'16,3"	5°01'22,8"	5°31'28,6"	6°01'33,7"	6°31'38,1"
φ_t	9°02'55,9"	10°03'17,4"	11°03'39,6"	12°04'02,6"	13°04'26,2"
x = 5	0,001	0,001	0,001	0,001	0,001
10	0,010	0,009	0,008	0,007	0,007
15	0,033	0,030	0,027	0,025	0,023
20	0,078	0,070	0,064	0,058	0,054
25	0,152	0,137	0,125	0,114	0,105
30	0,263	0,237	0,215	0,197	0,182
35	0,418	0,376	0,342	0,313	0,289
40	0,624	0,562	0,511	0,468	0,432
45	0,889	0,800	0,727	0,666	0,615
50	1,220	1,098	0,998	0,914	0,844
55	1,625	1,462	1,328	1,217	1,124
60	2,111	1,899	1,725	1,581	1,459
65	2,686	2,416	2,195	2,011	1,856
70	3,359	3,020	2,744	2,514	2,320
75	4,138	3,719	3,378	3,095	2,855
80	5,031	4,521	4,105	3,760	3,468
85	6,048	5,432	4,931	4,515	4,164
90	7,199	6,463	5,864	5,368	4,950
95	8,493	7,621	6,912	6,325	5,830
100		8,916	8,082	7,392	6,812
105		10,357	9,384	8,579	7,903
110			10,827	9,892	9,108
115			12,419	11,341	10,437
120				12,935	11,897
125				14,684	13,497
130					15,247
135					17,156

R	190		200		
	L	140	150	10	20
<i>l</i>	188,112	147,680	9,999	19,995	29,988
<i>d</i>	69,684	74,612	5,000	9,999	14,997
<i>y_l</i>	17,027	19,518	0,083	0,333	0,750
ΔR	4,277	4,907	0,021	0,083	0,187
<i>e</i>	44,106	46,851	3,333	6,660	9,977
τ_1	21°06'32,3"	22°37'00,3"	1°25'56,6"	2°51'53,2"	4°17'49,9"
ω_1	7°01'41,6"	7°31'44,2"	0°28'38,9"	0°57'17,7"	1°25'56,4"
φ_1	14°04'50,7"	15°05'16,1"	0°57'17,7"	1°54'35,5"	2°51'53,5"
<i>x</i> = 5	0,001	0,001	0,010	0,005	0,003
10	0,006	0,006	0,083	0,042	0,028
15	0,021	0,020	0,271	0,141	0,094
20	0,050	0,047		0,334	0,222
25	0,098	0,091		0,647	0,434
30	0,169	0,158			0,751
35	0,269	0,251			1,190
40	0,401	0,374			
45	0,571	0,533			
50	0,784	0,731			
55	1,043	0,974			
60	1,355	1,264			
65	1,723	1,608			
70	2,153	2,009			
75	2,650	2,478			
80	3,219	3,003			
85	3,864	3,605			
90	4,592	4,283			
95	5,408	5,043			
100	6,317	5,890			
105	7,326	6,829			
110	8,441	7,866			
115	9,668	9,007			
120	11,016	10,258			
125	12,490	11,626			
130	14,101	13,119			
135	15,857	14,743			
140	17,768	16,509			
145	19,843	18,426			
150		20,503			
155		22,751			

R	200				
	L	40	50	60	70
<i>l</i>	39,960	49,922	59,865	69,786	79,681
<i>d</i>	19,993	24,987	29,978	34,964	39,947
<i>y_l</i>	1,332	2,081	2,995	4,074	5,315
ΔR	0,333	0,521	0,749	1,020	1,381
<i>e</i>	13,279	16,581	19,818	23,044	26,235
τ_1	5°43'46,5"	7°09'43,1"	8°35'39,7"	10°01'36,3"	11°27'33,9"
ω_1	1°54'34,9"	2°23'13,2"	2°51'51,3"	3°20'29,0"	3°49'06,3"
φ_1	3°49'11,6"	4°46'29,9"	5°43'48,4"	6°41'07,3"	7°38'26,7"
<i>x</i> = 5	0,003	0,002	0,002	0,001	0,001
10	0,021	0,017	0,014	0,012	0,010
15	0,070	0,056	0,047	0,040	0,035
20	0,167	0,133	0,111	0,095	0,083
25	0,328	0,260	0,217	0,180	0,163
30	0,563	0,450	0,375	0,322	0,281
35	0,894	0,715	0,596	0,511	0,447
40	1,336	1,068	0,890	0,762	0,667
45	1,903	1,522	1,268	1,086	0,950
50		2,091	1,740	1,491	1,304
55		2,785	2,319	1,986	1,737
60			3,016	2,581	2,257
65			3,840	3,287	2,872
70				4,112	3,592
75				5,008	4,426
80					5,383
85					6,472

R = 200

R	200				
L	90	100	110	120	130
<i>l</i>	89,545	99,877	109,171	118,924	128,684
<i>d</i>	44,924	49,896	54,862	59,820	64,772
<i>y_l</i>	6,726	8,296	10,029	11,923	13,977
ΔR	1,684	2,079	2,514	2,990	3,508
<i>e</i>	29,386	32,491	35,545	38,544	41,483
τ_l	12°53'29,6"	14°19'26,2"	15°45'22,8"	17°11'19,4"	18°37'16,1"
ω_l	4°17'43,2"	4°46'19,6"	5°14'55,5"	5°43'30,7"	6°12'05,3"
φ_l	8°35'46,4"	9°33'06,6"	10°30'27,3"	11°27'48,7"	12°25'10,8"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,009	0,008	0,008	0,007	0,006
15	0,031	0,028	0,026	0,023	0,022
20	0,074	0,067	0,061	0,056	0,051
25	0,145	0,130	0,118	0,109	0,100
30	0,250	0,225	0,205	0,188	0,173
35	0,397	0,357	0,325	0,298	0,275
40	0,593	0,534	0,485	0,445	0,410
45	0,844	0,760	0,691	0,633	0,584
50	1,159	1,043	0,948	0,869	0,802
55	1,543	1,388	1,262	1,156	1,067
60	2,005	1,803	1,639	1,502	1,386
65	2,551	2,294	2,085	1,911	1,763
70	3,190	2,868	2,606	2,388	2,203
75	3,928	3,532	3,208	2,930	2,712
80	4,776	4,292	3,898	3,570	3,294
85	5,740	5,157	4,682	4,297	3,954
90	6,830	6,183	5,566	5,096	4,699
95	8,055	7,290	6,559	6,003	5,534
100		8,456	7,668	7,015	6,466
105		9,820	8,900	8,189	7,499
110			10,265	9,382	8,641
115			11,770	10,752	9,898
120				12,259	11,279
125				13,910	12,791
130					14,443
135					16,243

140

R = 200, 225

R	200		225		
L	140	150	10	20	30
<i>l</i>	138,295	147,904	10,000	19,996	29,987
<i>d</i>	69,715	74,650	5,000	9,999	14,998
<i>y_l</i>	16,191	18,563	0,074	0,296	0,606
ΔR	4,065	4,664	0,019	0,074	0,167
<i>e</i>	44,355	47,158	3,393	6,661	9,982
τ_l	20°08'12,7"	21°29'09,3"	1°16'23,7"	2°32'3"	3°49'11,0"
ω_l	6°40'39,1"	7°09'12,3"	0°25'27,9"	0°50'55,8"	1°16'23,5"
φ_l	13°22'33,6"	14°19'57,0"	0°50'55,8"	1°41'51,5"	2°32'47,5"
<i>x</i> = 5	0,001	0,001	0,009	0,005	0,003
10	0,006	0,006	0,074	0,037	0,025
15	0,020	0,019	0,241	0,125	0,083
20	0,048	0,044		0,296	0,198
25	0,093	0,087		0,575	0,386
30	0,161	0,150			0,667
35	0,255	0,238			1,057
40	0,381	0,356			
45	0,543	0,506			
50	0,744	0,695			
55	0,991	0,925			
60	1,287	1,201			
65	1,637	1,527			
70	2,045	1,908			
75	2,517	2,348			
80	3,057	2,852			
85	3,670	3,423			
90	4,360	4,067			
95	5,134	4,788			
100	5,997	5,591			
105	6,953	6,482			
110	8,009	7,465			
115	9,172	8,546			
120	10,447	9,730			
125	11,841	11,025			
130	13,363	12,436			
135	15,021	13,972			
140	16,822	15,638			
145	18,770	17,445			
150		19,401			
155		21,514			

141

R	225				
L	40	50	60	70	80
<i>l</i>	39,968	49,988	59,893	69,831	79,748
<i>d</i>	19,995	24,990	29,982	34,972	39,958
<i>y_l</i>	1,185	1,850	2,663	3,623	4,730
<i>A R</i>	0,296	0,463	0,666	0,907	1,184
<i>e</i>	13,291	16,588	19,856	23,105	26,326
τ_l	5°05'34,7"	6°21'58,3"	7°38'22,0"	8°54'45,6"	10°11'09,3"
ω_l	1°41'51,2"	2°07'18,6"	2°32'45,9"	2°58'13,0"	3°23'39,8"
φ_l	3°23'43,5"	4°14'39,7"	5°05'36,1"	5°56'32,6"	6°47'29,5"
<i>x</i> = 5	0,002	0,002	0,002	0,001	0,001
10	0,019	0,015	0,012	0,011	0,009
15	0,063	0,050	0,042	0,036	0,031
20	0,148	0,119	0,099	0,085	0,074
25	0,280	0,232	0,193	0,165	0,145
30	0,500	0,400	0,333	0,286	0,250
35	0,795	0,636	0,529	0,454	0,397
40	1,187	0,949	0,791	0,678	0,593
45	1,690	1,353	1,126	0,965	0,844
50		1,857	1,546	1,325	1,159
55		2,473	2,060	1,764	1,543
60			2,678	2,293	2,005
65			3,408	2,918	2,551
70				3,650	3,190
75				4,496	3,928
80					4,776
85					5,738

R	225				
L	90	100	110	120	130
<i>l</i>	89,641	99,507	109,845	119,149	128,919
<i>d</i>	44,940	49,918	54,891	59,858	64,820
<i>y_l</i>	5,983	7,381	8,925	10,613	12,444
<i>A R</i>	1,498	1,849	2,236	2,660	3,120
<i>e</i>	29,514	32,667	35,780	38,849	41,871
τ_l	11°27'33,0"	12°43'56,6"	14°00'20,3"	15°16'44,0"	16°33'07,6"
ω_l	3°49'06,3"	4°14'32,5"	4°39'58,2"	5°05'23,6"	5°30'48,5"
φ_l	7°38'26,7"	8°29'24,1"	9°20'22,1"	10°11'20,4"	11°02'19,1"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,008	0,007	0,007	0,006	0,006
15	0,028	0,025	0,023	0,021	0,019
20	0,066	0,059	0,054	0,049	0,046
25	0,129	0,116	0,105	0,096	0,089
30	0,222	0,200	0,182	0,167	0,154
35	0,353	0,318	0,289	0,265	0,244
40	0,527	0,474	0,431	0,395	0,365
45	0,750	0,675	0,614	0,563	0,519
50	1,030	0,927	0,842	0,772	0,713
55	1,371	1,234	1,121	1,028	0,949
60	1,781	1,602	1,456	1,335	1,232
65	2,266	2,038	1,852	1,698	1,567
70	2,833	2,548	2,315	2,121	1,958
75	3,488	3,136	2,849	2,611	2,409
80	4,238	3,810	3,461	3,171	2,925
85	5,092	4,576	4,156	3,807	3,512
90	6,056	5,441	4,960	4,523	4,172
95	7,137	6,411	5,818	5,327	4,912
100		7,493	6,798	6,222	5,737
105		8,695	7,886	7,215	6,651
110			9,089	8,313	7,660
115			10,414	9,521	8,770
120				10,847	9,987
125				12,296	11,317
130					12,768
135					14,345

R	225				
L	140	150	160	170	180
l	138,651	148,842	157,989	167,590	177,141
d	69,775	74,723	79,664	84,597	89,522
y_l	14,418	16,535	18,792	21,190	23,727
ΔR	3,617	4,150	4,719	5,325	5,966
e	44,840	47,754	50,607	53,397	56,120
τ_l	17°49'31,3"	19°05'54,9"	20°22'18,6"	21°38'42,3"	22°55'05,9"
ω_l	5°56'12,9"	6°21'36,7"	6°47'00,0"	7°12'22,6"	7°37'44,6"
φ_l	11°58'18,4"	12°44'18,2"	13°35'18,6"	14°26'19,7"	15°17'21,3"
$x = 5$	0,001	0,001	0,001	0,001	0,001
10	0,005	0,005	0,005	0,004	0,004
15	0,018	0,017	0,016	0,015	0,014
20	0,042	0,040	0,037	0,035	0,033
25	0,083	0,077	0,072	0,068	0,064
30	0,143	0,133	0,125	0,118	0,111
35	0,227	0,212	0,199	0,187	0,176
40	0,339	0,316	0,296	0,279	0,263
45	0,482	0,450	0,422	0,397	0,375
50	0,662	0,617	0,579	0,545	0,515
55	0,881	0,822	0,771	0,725	0,685
60	1,144	1,067	1,001	0,942	0,889
65	1,455	1,357	1,272	1,197	1,131
70	1,817	1,696	1,590	1,496	1,413
75	2,236	2,087	1,956	1,841	1,738
80	2,715	2,534	2,375	2,235	2,110
85	3,259	3,041	2,850	2,681	2,532
90	3,872	3,612	3,385	3,185	3,007
95	4,558	4,251	3,984	3,748	3,538
100	5,322	4,963	4,650	4,374	4,130
105	6,169	5,752	5,388	5,068	4,784
110	7,103	6,622	6,202	5,833	5,506
115	8,130	7,578	7,096	6,673	6,297
120	9,255	8,624	8,075	7,592	7,163
125	10,484	9,767	9,142	8,593	8,107
130	11,823	11,010	10,303	9,683	9,133
135	13,278	12,360	11,563	10,864	10,245
140	14,857	13,824	12,928	12,142	11,448
145	16,565	15,407	14,402	13,523	12,746
150		17,116	15,993	15,010	14,144
155		18,958	17,706	16,612	15,648

R	225				
L	160	170	180		
l	157,989	167,590	177,141		
d	79,664	84,597	89,522		
y_l	18,792	21,190	23,727		
ΔR	4,719	5,325	5,966		
e	50,607	53,397	56,120		
τ_l	20°22'18,6"	21°38'42,3"	22°55'05,9"		
ω_l	6°47'00,0"	7°12'22,6"	7°37'44,6"		
φ_l	13°35'18,6"	14°26'19,7"	15°17'21,3"		
$x = 155$	17,706	16,612	15,648		
160	19,550	18,333	17,262		
165	21,530	20,181	18,994		
170		22,163	20,849		
175		24,285	22,835		
180			24,959		
185			27,228		

R = 225

R	225		
L	190	200	
l	186,641	196,085	
d	94,438	99,345	
y_l	26,402	29,214	
ΔR	6,643	7,355	
e	58,771	61,346	
τ_l	24°11'29,6"	25°27'53,3"	
ω_l	8°03'05,9"	8°28'26,4"	
φ_l	16°08'23,7"	16°59'26,9"	
$x = 5$	—	—	
10	0,004	0,004	
15	0,013	0,013	
20	0,031	0,030	
25	0,061	0,058	
30	0,105	0,100	
35	0,167	0,159	
40	0,250	0,237	
45	0,355	0,338	
50	0,487	0,463	
55	0,649	0,616	
60	0,842	0,800	
65	1,071	1,018	
70	1,338	1,271	
75	1,646	1,564	
80	1,999	1,898	
85	2,398	2,278	
90	2,848	2,705	
95	3,351	3,183	
100	3,911	3,714	
105	4,530	4,302	
110	5,213	4,950	
115	5,962	5,661	
120	6,781	6,438	
125	7,674	7,284	
130	8,643	8,204	
135	9,694	9,200	
140	10,830	10,276	
145	12,065	11,436	
150	13,374	12,685	
155	14,791	14,025	

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R = 225

R	225		
L	190	200	
l	186,641	196,085	
d	94,438	99,345	
y_l	26,402	29,214	
ΔR	6,643	7,355	
e	58,771	61,346	
τ_l	24°11'29,6"	25°27'53,3"	
ω_l	8°03'05,9"	8°28'26,4"	
φ_l	16°08'23,7"	16°59'26,9"	
$x = 155$	14,791	14,025	
160	16,312	15,463	
165	17,942	17,003	
170	19,686	18,650	
175	21,552	20,409	
180	23,545	22,287	
185	25,673	24,290	
190	27,945	26,425	
195	30,366	28,701	
200		31,125	
205		33,705	

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147

R = 250

R	250				
L	10	20	30	40	50
<i>l</i>	10,000	19,997	29,989	39,974	49,950
<i>d</i>	5,000	9,999	14,998	19,996	24,992
<i>y_l</i>	0,067	0,267	0,600	1,066	1,665
ΔR	0,017	0,067	0,150	0,267	0,417
<i>e</i>	3,333	6,662	9,986	13,299	16,599
τ_l	1°08'45,3"	2°17'30,6"	3°26'15,9"	4°35'01,2"	5°43'46,5"
ω_l	0°22'55,1"	0°45'50,2"	1°08'45,2"	1°31'40,1"	1°54'34,9"
φ_l	0°45'50,2"	1°31'40,4"	2°17'30,7"	3°03'21,1"	3°49'11,6"
<i>x</i> = 5	0,008	0,004	0,003	0,002	0,002
10	0,067	0,033	0,022	0,017	0,013
15	0,217	0,113	0,075	0,056	0,045
20		0,267	0,178	0,133	0,107
25		0,517	0,347	0,260	0,208
30			0,600	0,450	0,360
35			0,951	0,715	0,572
40				1,068	0,854
45				1,520	1,217
50					1,670
55					2,224

148

R = 250

R	250				
L	60	70	80	90	100
<i>l</i>	59,914	69,863	79,795	89,709	99,601
<i>d</i>	29,986	34,977	39,966	44,951	49,933
<i>y_l</i>	2,398	3,262	4,259	5,388	6,648
ΔR	0,600	0,816	1,066	1,348	1,664
<i>e</i>	19,883	28,148	26,390	29,607	32,794
τ_l	6°52'31,8"	8°01'17,1"	9°10'02,4"	10°18'47,7"	11°27'33,0"
ω_l	2°17'29,6"	2°40'24,1"	3°03'18,4"	3°26'12,5"	3°49'06,3"
φ_l	4°35'02,2"	5°20'53,0"	6°06'44,0"	6°52'35,2"	7°38'26,7"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,011	0,010	0,008	0,007	0,007
15	0,038	0,032	0,028	0,025	0,023
20	0,089	0,076	0,067	0,059	0,053
25	0,174	0,149	0,130	0,116	0,104
30	0,300	0,257	0,225	0,200	0,180
35	0,476	0,408	0,357	0,318	0,286
40	0,712	0,610	0,534	0,474	0,427
45	1,014	0,869	0,760	0,675	0,608
50	1,391	1,192	1,043	0,927	0,834
55	1,853	1,587	1,388	1,234	1,110
60	2,403	2,062	1,808	1,602	1,442
65	3,064	2,624	2,294	2,038	1,834
70		3,281	2,868	2,548	2,292
75		4,041	3,532	3,136	2,821
80			4,292	3,810	3,426
85			5,155	4,576	4,114
90				5,441	4,890
95				6,409	5,759
100					6,729
105					7,804

149

R	250				
L	110	120	130	140	150
<i>l</i>	109,469	119,311	129,124	138,906	148,656
<i>d</i>	54,911	59,885	64,854	69,817	74,776
<i>y_l</i>	8,039	9,561	11,212	12,994	14,904
ΔR	2,013	2,395	2,810	3,258	3,738
<i>e</i>	35,949	39,068	42,148	45,187	48,180
τ_l	12°36'18,3"	13°45'03,6"	14°53'48,9"	16°02'34,2"	17°11'19,4"
ω_l	4°11'59,9"	4°34'53,1"	4°57'46,0"	5°20'38,6"	5°43'30,7"
φ_l	8°24'18,4"	9°10'10,5"	9°56'02,9"	10°41'55,6"	11°27'48,7"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,006	0,006	0,005	0,005	0,004
15	0,020	0,019	0,017	0,016	0,015
20	0,048	0,044	0,041	0,038	0,036
25	0,085	0,087	0,080	0,074	0,069
30	0,164	0,150	0,138	0,129	0,120
35	0,260	0,238	0,220	0,204	0,191
40	0,388	0,356	0,328	0,305	0,284
45	0,552	0,506	0,467	0,434	0,405
50	0,758	0,695	0,641	0,595	0,556
55	1,009	0,925	0,854	0,798	0,740
60	1,310	1,201	1,108	1,029	0,961
65	1,667	1,527	1,410	1,309	1,221
70	2,088	1,908	1,761	1,635	1,526
75	2,568	2,348	2,167	2,012	1,877
80	3,113	2,852	2,631	2,443	2,279
85	3,737	3,423	3,158	2,932	2,735
90	4,440	4,067	3,752	3,482	3,249
95	5,229	4,788	4,416	4,098	3,823
100	6,107	5,591	5,156	4,784	4,468
105	7,082	6,482	5,976	5,544	5,171
110	8,158	7,465	6,881	6,382	5,951
115	9,342	8,546	7,875	7,302	6,808
120		9,730	8,964	8,310	7,746
125		11,024	10,152	9,409	8,769
130			11,447	10,606	9,881
135			12,853	11,904	11,087
140				13,311	12,393
145				14,880	13,803
150					15,324
155					16,959

R	250				
L	160	170	180	190	200
<i>l</i>	158,369	168,045	177,681	187,275	196,824
<i>d</i>	79,728	84,674	89,613	94,545	99,469
<i>y_l</i>	16,942	19,108	21,401	23,820	26,363
ΔR	4,251	4,797	5,375	5,986	6,629
<i>e</i>	51,125	54,018	56,856	59,636	62,355
τ_l	18°20'04,7"	19°28'50,0"	20°37'35,3"	21°46'20,6"	22°55'05,9"
ω_l	6°06'22,5"	6°29'13,7"	6°52'04,5"	7°14'54,8"	7°37'44,6"
φ_l	12°13'42,2"	12°59'36,3"	13°45'30,8"	14°31'25,8"	15°17'21,3"
<i>x</i> = 5	0,001	—	—	—	—
10	0,004	0,004	0,004	0,004	0,003
15	0,014	0,013	0,013	0,012	0,011
20	0,033	0,031	0,030	0,028	0,027
25	0,065	0,061	0,058	0,055	0,052
30	0,113	0,106	0,100	0,095	0,090
35	0,179	0,168	0,159	0,150	0,143
40	0,267	0,251	0,237	0,225	0,213
45	0,380	0,357	0,338	0,320	0,304
50	0,521	0,490	0,463	0,439	0,417
55	0,693	0,653	0,616	0,584	0,555
60	0,900	0,847	0,800	0,758	0,720
65	1,145	1,078	1,018	0,964	0,916
70	1,430	1,346	1,271	1,204	1,144
75	1,760	1,656	1,564	1,481	1,407
80	2,136	2,010	1,898	1,798	1,708
85	2,564	2,412	2,278	2,158	2,050
90	3,045	2,865	2,705	2,562	2,434
95	3,583	3,371	3,183	3,015	2,863
100	4,182	3,934	3,714	3,518	3,341
105	4,845	4,557	4,302	4,074	3,870
110	5,575	5,244	4,950	4,688	4,452
115	6,377	5,998	5,661	5,360	5,090
120	7,254	6,822	6,438	6,095	5,788
125	8,210	7,720	7,284	6,896	6,547
130	9,250	8,695	8,204	7,765	7,372
135	10,377	9,752	9,260	8,707	8,265
140	11,595	10,895	10,276	9,724	9,229
145	12,911	12,128	11,436	10,820	10,267
150	14,328	13,455	12,685	11,999	11,384
155	15,852	14,882	14,025	13,264	12,582

R = 250

R	250				
L	160	170	180	190	200
<i>l</i>	158,369	168,045	177,681	187,275	196,824
<i>d</i>	79,728	84,674	89,613	94,545	99,469
<i>y_l</i>	16,942	19,108	21,401	23,820	26,363
ΔR	4,251	4,797	5,375	5,986	6,629
<i>e</i>	51,125	54,018	56,856	59,636	62,355
ζ_l	18°20'04,7"	19°28'50,0"	20°37'35,3"	21°46'20,6"	22°55'05,9"
ω_l	6°06'22,5"	6°29'13,7"	6°52'04,5"	7°14'54,8"	7°37'44,6"
φ_l	12°13'42,2"	12°59'36,3"	13°45'30,8"	14°31'25,8"	15°17'21,3"
<i>x</i> = 155	15,852	14,882	14,025	13,264	12,582
160	17,489	16,412	15,463	14,620	13,865
165	19,243	18,053	17,003	16,071	15,238
170		19,809	18,650	17,622	16,704
175		21,685	20,469	19,277	18,267
180			22,287	21,043	19,934
185			24,288	22,924	21,708
190				24,927	23,585
195				27,056	25,601
200					27,732
205					29,894

152

R = 275

R	275				
L	10	20	30	40	50
<i>l</i>	10,000	19,997	29,991	39,979	49,959
<i>d</i>	5,000	10,000	14,999	19,996	24,993
<i>y_l</i>	0,061	0,242	0,545	0,969	1,514
ΔR	0,015	0,061	0,136	0,242	0,379
<i>e</i>	3,333	6,663	9,988	13,305	16,611
ζ_l	1°02'30,3"	2°05'00,5"	3°07'30,8"	4°10'01,1"	5°12'31,4"
ω_l	0°20'50,1"	0°41'40,2"	1°02'30,2"	1°23'20,1"	1°44'10,0"
φ_l	0°41'40,2"	1°23'20,3"	2°05'00,6"	2°46'41,0"	3°28'21,4"
<i>x</i> = 5	0,008	0,004	0,003	0,002	0,002
10	0,061	0,030	0,020	0,015	0,012
15	0,197	0,102	0,068	0,051	0,041
20		0,242	0,162	0,121	0,097
25		0,470	0,316	0,237	0,189
30			0,546	0,409	0,327
35			0,865	0,650	0,520
40				0,971	0,776
45				1,381	1,106
50					1,518
55					2,021

153

R	275				
	L	60	70	80	90
<i>l</i>	59,929	69,887	79,831	89,759	99,670
<i>d</i>	29,988	34,981	39,972	44,960	49,945
<i>y_l</i>	2,180	2,966	3,873	4,900	6,046
ΔR	0,545	0,742	0,909	1,226	1,518
<i>e</i>	19,904	23,180	26,488	29,675	32,887
τ_1	6°15'01,6"	7°17'31,9"	8°20'02,2"	9°22'32,4"	10°25'02,7"
ω_1	2°04'59,8"	2°25'49,4"	2°46'38,9"	3°07'28,3"	3°28'17,4"
φ_1	4°10'01,8"	4°51'42,5"	5°33'23,3"	6°15'04,1"	6°56'45,3"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,010	0,009	0,008	0,007	0,006
15	0,034	0,029	0,026	0,023	0,020
20	0,081	0,069	0,061	0,054	0,048
25	0,158	0,135	0,118	0,105	0,095
30	0,278	0,234	0,205	0,182	0,164
35	0,438	0,371	0,325	0,289	0,260
40	0,647	0,554	0,485	0,431	0,388
45	0,921	0,789	0,691	0,614	0,552
50	1,264	1,083	0,948	0,842	0,758
55	1,684	1,443	1,262	1,121	1,009
60	2,188	1,874	1,639	1,456	1,310
65	2,783	2,384	2,085	1,852	1,667
70		2,981	2,608	2,315	2,083
75		3,669	3,208	2,849	2,563
80			3,898	3,461	3,118
85			4,680	4,156	3,737
90				4,940	4,440
95				5,817	5,229
100					6,107
105					7,081

R	275				
	L	110	120	130	140
<i>l</i>	109,561	119,430	129,276	139,096	148,888
<i>d</i>	54,927	59,905	64,879	69,849	74,814
<i>y_l</i>	7,312	8,698	10,202	11,824	13,564
ΔR	1,831	2,178	2,556	2,963	3,400
<i>e</i>	36,073	39,230	42,354	45,444	48,496
τ_1	11°27'33,0"	12°30'03,2"	13°32'33,5"	14°35'03,8"	15°37'34,0"
ω_1	3°49'06,3"	4°09'55,0"	4°30'43,5"	4°51'31,0"	5°12'19,5"
φ_1	7°38'26,7"	8°20'08,2"	9°01'50,0"	9°43'32,2"	10°25'14,5"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,006	0,005	0,005	0,004	0,004
15	0,019	0,017	0,016	0,015	0,014
20	0,044	0,040	0,037	0,035	0,032
25	0,086	0,079	0,073	0,068	0,063
30	0,149	0,136	0,126	0,117	0,109
35	0,236	0,217	0,200	0,186	0,173
40	0,353	0,323	0,298	0,277	0,259
45	0,502	0,460	0,425	0,395	0,368
50	0,689	0,632	0,583	0,541	0,505
55	0,917	0,841	0,776	0,720	0,672
60	1,191	1,092	1,008	0,936	0,873
65	1,515	1,388	1,281	1,190	1,110
70	1,893	1,735	1,601	1,486	1,387
75	2,329	2,134	1,970	1,829	1,706
80	2,828	2,591	2,391	2,220	2,072
85	3,395	3,110	2,870	2,664	2,486
90	4,033	3,695	3,409	3,164	2,952
95	4,748	4,349	4,012	3,723	3,474
100	5,545	5,077	4,683	4,346	4,054
105	6,427	5,884	5,427	5,035	4,697
110	7,402	6,775	6,246	5,795	5,405
115	8,472	7,753	7,147	6,629	6,182
120		8,825	8,132	7,541	7,031
125		9,993	9,207	8,536	7,957
130			10,377	9,618	8,964
135			11,646	10,791	10,055
140				12,061	11,234
145				13,431	12,507
150					13,878
155					15,350

R = 275

R	275					
	L	160	170	180	190	200
<i>l</i>	158,651	168,383	178,082	187,745	197,372	
<i>d</i>	79,775	84,730	89,680	94,623	99,561	
<i>y</i>	15,422	17,396	19,487	21,693	24,014	
ΔR	3,867	4,364	4,889	5,446	6,032	
<i>e</i>	51,508	54,477	57,401	60,277	63,103	
τ_l	16°40'04,3"	17°42'34,6"	18°45'04,9"	19°47'35,1"	20°50'05,4"	
ω_l	5°33'07,1"	5°53'54,3"	6°14'41,2"	6°35'27,6"	6°56'13,7"	
φ_l	11°06'57,2"	11°48'40,3"	12°30'23,7"	13°12'07,5"	13°53'51,7"	
<i>x</i> = 5	—	—	—	—	—	
10	0,004	0,004	0,003	0,003	0,003	
15	0,013	0,012	0,011	0,011	0,010	
20	0,030	0,029	0,027	0,026	0,024	
25	0,059	0,056	0,053	0,050	0,047	
30	0,102	0,098	0,091	0,086	0,082	
35	0,162	0,153	0,144	0,137	0,130	
40	0,242	0,228	0,216	0,204	0,194	
45	0,345	0,325	0,307	0,291	0,276	
50	0,474	0,446	0,421	0,399	0,379	
55	0,630	0,593	0,560	0,531	0,504	
60	0,818	0,770	0,727	0,689	0,655	
65	1,041	0,980	0,925	0,876	0,832	
70	1,300	1,224	1,156	1,095	1,040	
75	1,600	1,505	1,422	1,347	1,279	
80	1,942	1,827	1,726	1,635	1,553	
85	2,330	2,192	2,070	1,961	1,863	
90	2,767	2,603	2,458	2,329	2,212	
95	3,255	3,063	2,892	2,740	2,602	
100	3,799	3,574	3,375	3,197	3,036	
105	4,401	4,140	3,909	3,702	3,516	
110	5,064	4,763	4,497	4,259	4,045	
115	5,791	5,447	5,142	4,869	4,624	
120	6,586	6,194	5,847	5,536	5,257	
125	7,452	7,008	6,614	6,262	5,946	
130	8,393	7,892	7,447	7,050	6,694	
135	9,413	8,849	8,349	7,904	7,503	
140	10,515	9,883	9,324	8,824	8,377	
145	11,703	10,998	10,373	9,816	9,317	
150	12,982	12,196	11,502	10,882	10,327	
155	14,356	13,483	12,712	12,026	11,411	

156

R = 275

R	275					
	L	160	170	180	190	200
<i>l</i>	158,651	168,383	178,082	187,745	197,372	
<i>d</i>	79,775	84,730	89,680	94,623	99,561	
<i>y</i>	15,422	17,396	19,487	21,693	24,014	
ΔR	3,867	4,364	4,889	5,446	6,032	
<i>e</i>	51,508	54,477	57,401	60,277	63,103	
τ_l	16°40'04,3"	17°42'34,6"	18°45'04,9"	19°47'35,1"	20°50'05,4"	
ω_l	5°33'07,1"	5°53'54,3"	6°14'41,2"	6°35'27,6"	6°56'13,7"	
φ_l	11°06'57,2"	11°48'40,3"	12°30'23,7"	13°12'07,5"	13°53'51,7"	
<i>x</i> = 155	14,356	13,483	12,712	12,026	11,411	
160	15,829	14,863	14,010	13,250	12,570	
165	17,406	16,340	15,397	14,559	13,809	
170		17,918	16,879	15,957	15,132	
175		19,602	18,461	17,447	16,540	
180			20,145	19,033	18,040	
185			21,938	20,721	19,634	
190				22,516	21,327	
195				24,420	23,124	
200					25,030	
205					27,049	

157

R = 300

R	300				
L	10	20	30	40	50
<i>l</i>	10,000	18,998	28,993	38,982	48,965
<i>d</i>	5,000	10,000	14,999	19,997	24,994
<i>y_l</i>	0,056	0,222	0,500	0,889	1,388
ΔR	0,014	0,056	0,125	0,222	0,347
<i>e</i>	3,333	6,664	9,990	13,309	16,620
τ_l	0°57'17,8"	1°54'35,5"	2°51'53,2"	3°49'11,0"	4°46'28,7"
ω_l	0°19'05,9"	0°38'11,8"	0°57'17,7"	1°16'23,5"	1°35'29,2"
φ_l	0°38'11,9"	1°16'23,7"	1°54'35,5"	2°32'47,5"	3°10'59,5"
<i>x</i> = 5	0,007	0,008	0,002	0,002	0,001
10	0,056	0,028	0,019	0,014	0,011
15	0,181	0,094	0,063	0,047	0,038
20		0,222	0,148	0,111	0,089
25		0,431	0,289	0,217	0,174
30			0,500	0,375	0,300
35			0,792	0,596	0,476
40				0,890	0,712
45				1,266	1,014
50					1,391
55					1,851

158

R = 300

R	300				
L	60	70	80	90	100
<i>l</i>	59,940	69,905	79,858	89,798	99,723
<i>d</i>	29,990	34,984	39,976	44,966	49,954
<i>y_l</i>	1,999	2,720	3,551	4,493	5,545
ΔR	0,500	0,680	0,888	1,124	1,387
<i>e</i>	19,919	23,205	26,475	29,727	32,959
τ_l	5°43'46,5"	6°41'04,2"	7°38'22,0"	8°35'39,7"	9°32'57,5"
ω_l	1°54'34,9"	2°13'40,5"	2°32'45,9"	2°51'51,3"	3°10'56,4"
φ_l	3°49'11,0"	4°27'28,7"	5°05'36,1"	5°43'48,4"	6°22'01,1"
<i>x</i> = 5	0,001	0,001	0,001	0,001	0,001
10	0,009	0,008	0,007	0,006	0,006
15	0,031	0,027	0,023	0,021	0,019
20	0,074	0,063	0,056	0,049	0,044
25	0,145	0,124	0,109	0,096	0,087
30	0,250	0,214	0,188	0,167	0,150
35	0,397	0,340	0,298	0,265	0,238
40	0,593	0,508	0,445	0,395	0,356
45	0,844	0,724	0,633	0,563	0,506
50	1,159	0,993	0,869	0,772	0,695
55	1,543	1,322	1,156	1,028	0,925
60	2,005	1,717	1,502	1,335	1,201
65	2,250	2,185	1,911	1,698	1,527
70		2,731	2,388	2,121	1,908
75		3,361	2,939	2,611	2,348
80			3,570	3,171	2,852
85			4,286	3,807	3,428
90				4,523	4,067
95				5,326	4,788
100					5,591
105					6,481

159

R = 300

R	300				
L	110	120	130	140	150
<i>l</i>	109,631	119,521	129,391	139,240	149,065
<i>d</i>	54,938	59,920	64,898	69,873	74,844
<i>y</i>	6,706	7,977	9,357	10,847	12,444
ΔR	1,679	1,997	2,343	2,717	3,118
<i>e</i>	36,168	39,353	42,510	45,639	48,736
τ_i	10°30'15,2"	11°27'38,0"	12°24'50,7"	13°22'08,5"	14°19'26,2"
ω_i	3°30'01,5"	3°49'06,3"	4°08'11,0"	4°27'15,4"	4°46'19,6"
φ_i	7°00'13,7"	7°38'26,7"	8°16'39,7"	8°54'53,1"	9°33'06,6"
<i>x</i> = 5	0,001	0,001	0,001	—	—
10	0,005	0,005	0,004	0,004	0,004
15	0,017	0,016	0,014	0,013	0,013
20	0,040	0,037	0,034	0,032	0,030
25	0,079	0,072	0,067	0,062	0,058
30	0,136	0,125	0,115	0,107	0,100
35	0,217	0,199	0,183	0,170	0,159
40	0,323	0,296	0,274	0,254	0,237
45	0,460	0,422	0,389	0,362	0,338
50	0,632	0,579	0,534	0,496	0,463
55	0,841	0,771	0,711	0,660	0,616
60	1,092	1,001	0,924	0,858	0,800
65	1,388	1,272	1,174	1,090	1,018
70	1,735	1,590	1,467	1,362	1,271
75	2,134	1,956	1,805	1,676	1,564
80	2,591	2,375	2,191	2,034	1,898
85	3,110	2,850	2,630	2,441	2,278
90	3,695	3,385	3,123	2,899	2,705
95	4,349	3,984	3,675	3,411	3,183
100	5,077	4,650	4,290	3,981	3,714
105	5,884	5,388	4,970	4,612	4,302
110	6,775	6,202	5,720	5,307	4,950
115	7,752	7,096	6,543	6,070	5,661
120		8,075	7,443	6,904	6,438
125		9,141	8,425	7,813	7,284
130			9,492	8,801	8,204
135			10,649	9,871	9,200
140				11,028	10,276
145				12,276	11,436
150					12,685
155					14,025

160

R = 300

R	300				
L	160	170	180	190	200
<i>l</i>	158,866	168,640	178,387	188,104	197,789
<i>d</i>	79,811	84,773	89,731	94,683	99,631
<i>y</i>	14,150	15,964	17,885	19,912	22,046
ΔR	3,546	4,002	4,486	4,996	5,534
<i>e</i>	51,799	54,827	57,816	60,765	63,672
τ_i	15°16'44,0"	16°14'01,7"	17°11'19,4"	18°08'37,2"	19°05'54,9"
ω_i	5°05'23,6"	5°24'27,3"	5°43'30,7"	6°02'33,9"	6°21'36,7"
φ_i	10°11'20,4"	10°49'34,4"	11°27'48,7"	12°06'03,3"	12°44'18,2"
<i>x</i> = 5	—	—	—	—	—
10	0,003	0,003	0,003	0,003	0,003
15	0,012	0,011	0,010	0,010	0,009
20	0,028	0,026	0,025	0,023	0,022
25	0,054	0,051	0,048	0,046	0,043
30	0,094	0,088	0,083	0,079	0,075
35	0,149	0,140	0,132	0,125	0,119
40	0,222	0,209	0,197	0,187	0,178
45	0,316	0,298	0,281	0,266	0,253
50	0,434	0,409	0,386	0,366	0,347
55	0,578	0,544	0,514	0,487	0,462
60	0,750	0,706	0,667	0,632	0,600
65	0,954	0,898	0,848	0,803	0,763
70	1,192	1,122	1,059	1,003	0,953
75	1,466	1,380	1,303	1,234	1,172
80	1,780	1,675	1,582	1,498	1,423
85	2,135	2,009	1,897	1,797	1,707
90	2,535	2,386	2,253	2,134	2,027
95	2,983	2,807	2,650	2,511	2,385
100	3,481	3,275	3,092	2,929	2,782
105	4,032	3,793	3,581	3,392	3,222
110	4,638	4,364	4,120	3,902	3,706
115	5,304	4,989	4,710	4,461	4,236
120	6,031	5,673	5,355	5,071	4,816
125	6,823	6,417	6,057	5,736	5,447
130	7,683	7,225	6,819	6,457	6,131
135	8,615	8,100	7,644	7,237	6,871
140	9,621	9,044	8,534	8,078	7,669
145	10,705	10,062	9,492	8,985	8,529
150	11,870	11,155	10,522	9,958	9,452
155	13,121	12,328	11,627	11,002	10,441

11

161

R = 300

R	300					
	L	160	170	180	190	200
<i>l</i>	158,866	168,640	178,387	188,104	197,789	
<i>d</i>	79,811	84,773	89,731	94,683	99,631	
<i>y_t</i>	14,150	15,964	17,885	19,912	22,046	
ΔR	3,546	4,002	4,486	4,996	5,534	
<i>e</i>	51,799	54,827	57,816	60,765	63,672	
τ_l	15°16'44,0"	16°14'01,7"	17°11'19,4"	18°08'37,2"	19°05'54,9"	
ω_l	5°05'23,6"	5°24'27,3"	5°43'30,7"	6°02'33,9"	6°21'36,7"	
φ_l	16°11'20,4"	16°49'34,4"	17°27'48,7"	18°06'03,3"	18°44'18,2"	
<i>x</i>						
155	13,121	12,328	11,627	11,022	10,441	
160	14,462	13,585	12,809	12,118	11,499	
165	15,896	14,928	14,073	13,311	12,629	
170		16,363	15,421	14,584	13,834	
175		17,892	16,859	15,939	15,117	
180			18,389	17,381	16,481	
185			20,014	18,914	17,929	
190				20,541	19,467	
195				22,266	21,096	
200					22,822	
205					24,647	

162

R = 325

R	325					
	L	10	20	30	40	50
<i>l</i>	10,000	19,998	29,994	39,985	49,970	
<i>d</i>	5,000	10,000	14,999	19,997	24,995	
<i>y_t</i>	0,051	0,205	0,461	0,820	1,282	
ΔR	0,013	0,051	0,115	0,205	0,320	
<i>e</i>	3,333	6,664	9,991	13,313	16,627	
τ_l	0°52'53,3"	1°45'46,6"	2°38'39,9"	3°31'33,2"	4°24'26,5"	
ω_l	0°17'37,8"	0°35'15,5"	0°52'53,3"	1°10'30,9"	1°28'08,6"	
φ_l	0°35'15,5"	1°10'31,1"	1°45'46,6"	2°31'02,3"	2°56'17,9"	
<i>x</i>						
10	0,051	0,026	0,017	0,013	0,010	
20	0,359	0,205	0,137	0,103	0,082	
30		0,667	0,462	0,346	0,277	
40			1,078	0,821	0,657	
50				1,593	1,284	
60					2,211	

163

163

R	325				
	L	60	70	80	90
<i>l</i>	59,949	69,919	79,879	89,828	99,764
<i>d</i>	29,991	34,986	39,980	44,971	49,961
<i>y_l</i>	1,845	2,511	3,279	4,148	5,120
ΔR	0,461	0,628	0,820	1,038	1,281
<i>e</i>	19,981	23,224	26,503	29,767	33,014
τ_l	5°17'19,8"	6°10'13,1"	7°03'06,4"	7°55'59,7"	8°48'53,1"
ω_l	1°45'46,2"	2°08'28,7"	2°21'01,1"	2°38'38,4"	2°56'15,6"
φ_l	3°31'38,6"	4°06'49,4"	4°42'05,3"	5°17'21,3"	5°52'37,5"
<i>x</i> = 10	0,009	0,007	0,006	0,006	0,005
20	0,068	0,059	0,051	0,046	0,041
30	0,231	0,198	0,173	0,154	0,138
40	0,547	0,469	0,410	0,365	0,328
50	1,069	0,916	0,802	0,713	0,641
60	1,850	1,585	1,386	1,232	1,108
70	2,933	2,520	2,203	1,958	1,761
80		3,760	3,293	2,925	2,631
90			4,692	4,172	3,752
100				5,730	5,156
110					6,875

R	325				
	L	110	120	130	140
<i>l</i>	109,685	119,592	129,481	139,352	149,203
<i>d</i>	54,948	59,932	64,915	69,892	74,867
<i>y_l</i>	6,192	7,367	8,642	10,018	11,496
ΔR	1,550	1,844	2,164	2,509	2,879
<i>e</i>	36,242	39,448	42,632	45,791	48,923
τ_l	9°41'46,4"	10°34'39,7"	11°27'33,0"	12°20'26,3"	13°13'19,6"
ω_l	3°13'52,6"	3°31'29,6"	3°49'06,3"	4°06'42,9"	4°24'19,4"
φ_l	6°27'53,8"	7°03'10,1"	7°38'26,7"	8°13'43,4"	8°49'00,2"
<i>x</i> = 10	0,005	0,004	0,004	0,004	0,003
20	0,037	0,034	0,032	0,029	0,027
30	0,126	0,115	0,107	0,099	0,092
40	0,298	0,274	0,252	0,234	0,219
50	0,583	0,534	0,493	0,458	0,427
60	1,008	0,924	0,852	0,791	0,739
70	1,601	1,467	1,354	1,257	1,173
80	2,391	2,191	2,022	1,878	1,752
90	3,409	3,123	2,882	2,675	2,496
100	4,683	4,290	3,957	3,673	3,427
110	6,246	5,720	5,275	4,895	4,567
120	8,127	7,443	6,865	6,366	5,937
130		9,487	8,748	8,112	7,564
140			10,956	10,160	9,470
150				12,536	11,683
160					14,227

R = 325

R	325				
L	160	170	180	190	200
l	159,083	168,841	178,625	188,383	198,115
d	79,839	84,807	89,770	94,730	99,685
y_l	13,071	14,748	16,525	18,400	20,375
ΔR	3,275	3,696	4,143	4,614	5,111
e	52,026	55,099	58,139	61,145	64,114
τ_l	14°06'12,9"	14°59'06,2"	15°51'59,5"	16°44'52,8"	17°37'46,1"
ω_l	4°41'55,6"	4°59'31,6"	5°17'07,4"	5°34'43,0"	5°52'18,4"
φ_l	9°24'17,3"	9°59'34,6"	10°34'52,1"	11°10'09,8"	11°45'27,7"
$x = 10$	0,003	0,003	0,003	0,003	0,003
20	0,026	0,024	0,023	0,022	0,021
30	0,087	0,081	0,077	0,073	0,069
40	0,205	0,193	0,182	0,173	0,164
50	0,401	0,377	0,356	0,337	0,321
60	0,692	0,652	0,616	0,583	0,554
70	1,100	1,035	0,978	0,926	0,880
80	1,642	1,546	1,460	1,383	1,314
90	2,340	2,202	2,079	1,970	1,871
100	3,212	3,022	2,854	2,703	2,568
110	4,279	4,026	3,801	3,600	3,420
120	5,563	5,233	4,940	4,679	4,443
130	7,085	6,663	6,289	5,955	5,655
140	8,868	8,338	7,869	7,449	7,073
150	10,938	10,280	9,698	9,180	8,714
160	13,316	12,512	11,800	11,166	10,598
170	16,031	15,061	14,199	13,431	12,744
180		17,950	16,919	15,998	15,173
190			19,984	18,891	17,910
200				22,135	20,980
210					24,406

166

R = 350

R	350				
L	10	20	30	40	50
l	10,000	19,998	29,994	39,987	49,975
d	5,000	10,000	14,999	19,998	24,996
y_l	0,048	0,190	0,429	0,762	1,190
ΔR	0,012	0,048	0,107	0,190	0,298
e	3,333	6,664	9,992	13,316	16,632
τ_l	0°49'06,8"	1°38'13,3"	2°27'19,9"	3°16'26,6"	4°05'33,2"
ω_l	0°16'22,2"	0°32'44,4"	0°49'06,6"	1°05'28,8"	1°21'50,9"
φ_l	0°32'44,4"	1°05'28,9"	1°38'13,3"	2°10'57,8"	2°43'42,3"
$x = 10$	0,048	0,024	0,016	0,012	0,010
20	0,333	0,190	0,127	0,095	0,076
30		0,620	0,429	0,322	0,257
40			1,001	0,762	0,610
50				1,479	1,192
60					2,052

167

R	350					
	L	60	70	80	90	100
<i>l</i>	59,956	69,980	79,896	89,851	99,796	
<i>d</i>	29,998	34,988	39,983	44,975	49,966	
<i>y_l</i>	1,713	2,332	3,045	3,853	4,755	
ΔR	0,428	0,583	0,762	0,964	1,190	
<i>e</i>	19,941	23,239	26,526	29,799	33,058	
ζ_l	4°54'39,8"	5°43'46,5"	6°32'53,1"	7°21'59,8"	8°11'06,4"	
ω_l	1°38'12,9"	1°54'34,9"	2°10'56,8"	2°27'18,7"	2°43'40,4"	
φ_l	3°16'26,9"	3°49'11,6"	4°21'56,3"	4°54'41,1"	5°27'26,0"	
<i>x</i> = 10	0,008	0,007	0,006	0,005	0,005	
20	0,063	0,054	0,048	0,042	0,038	
30	0,214	0,184	0,161	0,143	0,129	
40	0,508	0,435	0,381	0,339	0,305	
50	0,993	0,851	0,744	0,662	0,595	
60	1,717	1,471	1,287	1,144	1,029	
70	2,722	2,339	2,045	1,817	1,635	
80		3,490	3,057	2,715	2,443	
90			4,354	3,872	3,482	
100				5,316	4,784	
110					6,377	

R	350					
	L	110	120	130	140	150
<i>l</i>	109,729	119,648	129,552	139,441	149,313	
<i>d</i>	54,955	59,941	64,925	69,907	74,885	
<i>y_l</i>	5,752	6,848	8,028	9,307	10,679	
ΔR	1,439	1,712	2,009	2,330	2,674	
<i>e</i>	36,300	39,524	42,729	45,911	49,071	
ζ_l	9°00'13,0"	9°49'19,7"	10°38'26,3"	11°27'33,0"	12°16'39,6"	
ω_l	3°00'02,1"	3°16'23,6"	3°32'45,0"	3°49'06,3"	4°05'27,5"	
φ_l	6°00'10,9"	6°32'56,1"	7°05'41,3"	7°38'26,7"	8°11'12,1"	
<i>x</i> = 10	0,004	0,004	0,004	0,003	0,003	
20	0,035	0,032	0,029	0,027	0,025	
30	0,117	0,107	0,099	0,092	0,086	
40	0,277	0,254	0,234	0,218	0,203	
50	0,541	0,496	0,458	0,425	0,397	
60	0,936	0,858	0,791	0,735	0,686	
70	1,486	1,362	1,257	1,167	1,089	
80	2,220	2,034	1,878	1,743	1,627	
90	3,164	2,899	2,675	2,483	2,317	
100	4,346	3,981	3,673	3,410	3,181	
110	5,795	5,307	4,895	4,543	4,238	
120	7,536	6,904	6,366	5,907	5,510	
130		8,796	8,112	7,524	7,016	
140			10,156	9,420	8,782	
150				11,617	10,830	
160					13,181	

R = 350

R	350				
L	160	170	180	190	200
l	159,166	169,000	178,813	188,605	198,374
d	79,861	84,833	89,802	94,767	99,729
β_l	12,145	13,704	15,356	17,100	18,937
ΔR	3,042	3,433	3,848	4,286	4,748
e	52,206	55,315	58,395	61,446	64,466
τ_l	13°05'46,2"	13°54'52,9"	14°43'59,5"	15°33'06,2"	16°22'12,8"
ω_l	4°21'48,4"	4°38'09,3"	4°54'29,9"	5°10'50,4"	5°27'10,7"
φ_l	8°43'57,8"	9°16'43,6"	9°49'29,6"	10°22'15,8"	10°55'02,1"
$x = 10$	0,003	0,008	0,008	0,003	0,002
20	0,024	0,022	0,021	0,020	0,019
30	0,080	0,076	0,071	0,068	0,064
40	0,190	0,179	0,169	0,160	0,152
50	0,372	0,350	0,331	0,313	0,298
60	0,643	0,605	0,572	0,541	0,514
70	1,021	0,961	0,908	0,860	0,817
80	1,525	1,435	1,355	1,284	1,220
90	2,172	2,044	1,930	1,829	1,737
100	2,982	2,806	2,649	2,510	2,384
110	3,972	3,737	3,529	3,342	3,174
120	5,162	4,857	4,585	4,343	4,124
130	6,573	6,183	5,836	5,527	5,249
140	8,225	7,735	7,300	6,912	6,563
150	10,139	9,532	8,995	8,515	8,084
160	12,340	11,598	10,940	10,354	9,828
170	14,848	13,953	13,158	12,450	11,814
180		16,620	15,670	14,821	14,061
190			18,497	17,492	16,588
200				20,481	19,419
210					22,573

170

R = 375

R	375				
L	10	20	30	40	50
l	10,000	19,999	29,995	39,989	49,978
d	5,000	10,000	14,999	19,998	24,996
β_l	0,044	0,178	0,400	0,711	1,111
ΔR	0,011	0,044	0,100	0,178	0,278
e	3,333	6,665	9,993	13,318	16,637
τ_l	0°45'50,2"	1°31'40,4"	2°17'30,6"	3°03'20,8"	3°49'11,0"
ω_l	0°15'16,7"	0°30'33,5"	0°45'50,2"	1°01'06,9"	1°16'23,5"
φ_l	0°30'33,5"	1°01'06,9"	1°31'40,4"	2°02'13,9"	2°32'47,5"
$x = 10$	0,044	0,022	0,015	0,011	0,009
20	0,311	0,178	0,119	0,089	0,071
30		0,578	0,400	0,300	0,240
40			0,934	0,711	0,569
50				1,380	1,112
60					1,915

171

R = 375

R	375				
L	60	70	80	90	100
<i>l</i>	50,962	69,939	79,909	89,870	99,822
<i>d</i>	29,994	34,990	39,985	44,978	49,970
<i>y_l</i>	1,599	2,176	2,842	3,596	4,439
ΔR	0,400	0,544	0,711	0,900	1,110
<i>e</i>	19,948	23,251	26,544	29,825	33,093
τ_l	4°35'01,2"	5°20'51,4"	6°06'41,6"	6°52'31,8"	7°38'22,0"
ω_l	1°31'40,1"	1°46'56,7"	2°02'13,2"	2°17'29,6"	2°32'45,9"
φ_l	3°03'21,1"	3°33'54,7"	4°04'28,4"	4°35'02,2"	5°05'36,1"
<i>x</i> - 10	0,007	0,006	0,006	0,005	0,004
20	0,059	0,051	0,044	0,040	0,036
30	0,200	0,171	0,150	0,133	0,120
40	0,474	0,406	0,356	0,316	0,284
50	0,927	0,794	0,695	0,617	0,556
60	1,602	1,373	1,201	1,067	0,961
70	2,540	2,182	1,908	1,696	1,526
80		3,255	2,852	2,534	2,279
90			4,061	3,612	3,249
100				4,958	4,463
110					5,946

172

R = 375

R	375				
L	110	120	130	140	150
<i>l</i>	109,764	119,693	129,610	139,513	149,401
<i>d</i>	54,961	59,949	64,935	69,919	74,900
<i>y_l</i>	5,370	6,388	7,495	8,689	9,971
ΔR	1,343	1,599	1,876	2,175	2,496
<i>e</i>	36,347	39,586	42,807	46,009	49,191
τ_l	8°24'12,2"	9°10'02,4"	9°55'52,6"	10°41'42,8"	11°27'33,0"
ω_l	2°48'02,2"	3°03'18,4"	3°18'34,5"	3°33'50,5"	3°49'06,3"
φ_l	5°36'10,0"	6°06'44,0"	6°37'18,1"	7°07'52,3"	7°38'26,7"
<i>x</i> - 10	0,004	0,004	0,003	0,003	0,003
20	0,032	0,030	0,027	0,025	0,024
30	0,109	0,100	0,092	0,086	0,080
40	0,259	0,237	0,219	0,203	0,190
50	0,505	0,463	0,427	0,397	0,370
60	0,873	0,800	0,739	0,686	0,640
70	1,387	1,271	1,173	1,089	1,017
80	2,072	1,898	1,752	1,627	1,518
90	2,952	2,705	2,496	2,317	2,163
100	4,054	3,714	3,427	3,181	2,968
110	5,405	4,950	4,567	4,238	3,954
120	7,027	6,438	5,937	5,510	5,139
130		8,200	7,564	7,016	6,544
140			9,466	8,782	8,188
150				10,826	10,093
160					12,280

173

R	375				
L	160	170	180	190	200
<i>l</i>	159,273	169,129	178,966	188,784	198,582
<i>d</i>	79,879	84,855	89,828	94,797	99,763
<i>y/l</i>	11,341	12,797	14,341	15,971	17,688
ΔR	2,849	3,205	3,593	4,002	4,438
<i>e</i>	52,351	55,489	58,602	61,689	64,749
τ_l	12°13'23,2"	12°59'13,4"	13°45'03,6"	14°30'53,8"	15°16'44,0"
ω_l	4°04'22,1"	4°19'37,7"	4°34'53,1"	4°50'08,4"	5°05'23,6"
ϱ_l	8°09'01,1"	8°39'35,7"	9°10'10,5"	9°40'45,4"	10°11'20,4"
<i>x</i> = 10	0,003	0,003	0,002	0,002	0,002
20	0,022	0,021	0,020	0,019	0,018
30	0,075	0,071	0,067	0,063	0,060
40	0,178	0,167	0,158	0,150	0,142
50	0,347	0,327	0,309	0,292	0,278
60	0,600	0,565	0,533	0,505	0,480
70	0,953	0,897	0,847	0,803	0,762
80	1,423	1,359	1,265	1,198	1,138
90	2,027	1,908	1,801	1,707	1,621
100	2,782	2,618	2,472	2,342	2,224
110	3,706	3,487	3,292	3,119	2,962
120	4,816	4,531	4,278	4,052	3,848
130	6,131	5,787	5,444	5,156	4,896
140	7,669	7,213	6,808	6,447	6,122
150	9,432	8,887	8,387	7,940	7,539
160	11,499	10,809	10,198	9,653	9,164
170	13,830	12,999	12,261	11,603	11,012
180		15,476	14,595	13,808	13,102
190			17,219	16,288	15,450
200				19,061	18,078
210					20,002

R	400				
L	10	20	30	40	50
<i>l</i>	10,000	19,999	29,996	39,990	49,980
<i>d</i>	5,000	10,000	14,999	19,998	24,997
<i>y/l</i>	0,042	0,167	0,375	0,667	1,041
ΔR	0,010	0,042	0,094	0,167	0,260
<i>e</i>	3,333	6,665	9,994	13,320	16,640
τ_l	0°42'58,3"	1°25'56,6"	2°08'54,9"	2°51'53,2"	3°34'51,6"
ω_l	0°14'19,4"	0°28'38,9"	0°42'58,3"	0°57'17,7"	1°11'37,0"
ϱ_l	0°28'38,9"	0°57'17,7"	1°25'56,6"	1°54'35,5"	2°23'14,6"
<i>x</i> = 10	0,042	0,021	0,014	0,010	0,008
20	0,292	0,167	0,111	0,083	0,067
30		0,542	0,375	0,281	0,225
40			0,876	0,667	0,534
50				1,293	1,043
60					1,795

R = 400

R	400				
L	60	70	80	90	100
l	59,966	69,946	79,920	89,886	99,844
d	29,994	34,991	39,987	44,981	49,974
y_l	1,499	2,041	2,665	3,372	4,162
ΔR	0,375	0,510	0,666	0,843	1,041
e	19,955	23,261	26,559	29,846	33,123
τ_l	4°17'49,9"	5°00'48,2"	5°43'46,5"	6°26'44,8"	7°09'43,1"
ω_l	1°25'56,4"	1°40'15,7"	1°54'34,9"	2°08'54,1"	2°23'13,2"
φ_l	2°51'53,5"	3°20'32,5"	3°49'11,6"	4°17'50,7"	4°46'29,9"
$x - 10$	0,007	0,006	0,005	0,005	0,004
20	0,056	0,048	0,042	0,037	0,033
30	0,188	0,161	0,141	0,125	0,113
40	0,445	0,381	0,333	0,296	0,267
50	0,869	0,744	0,651	0,579	0,521
60	1,502	1,287	1,126	1,001	0,900
70	2,381	2,045	1,789	1,590	1,430
80		3,051	2,673	2,375	2,136
90			3,805	3,385	3,045
100				4,645	4,182
110					5,571

176

R = 400

R	400				
L	110	120	130	140	150
l	109,792	119,730	129,657	139,572	149,474
d	54,965	59,955	64,943	69,929	74,912
y_l	5,035	5,990	7,028	8,149	9,351
ΔR	1,260	1,499	1,759	2,089	2,341
e	36,386	39,686	42,870	46,088	49,289
τ_l	7°52'41,4"	8°35'39,7"	9°18'38,0"	10°01'36,3"	10°44'34,7"
ω_l	2°37'32,3"	2°51'51,3"	3°06'10,2"	3°20'29,0"	3°34'47,7"
φ_l	5°15'09,1"	5°43'48,4"	6°12'27,8"	6°41'07,3"	7°09'47,0"
$x - 10$	0,004	0,003	0,003	0,003	0,003
20	0,030	0,028	0,026	0,024	0,022
30	0,102	0,094	0,087	0,080	0,075
40	0,242	0,222	0,205	0,190	0,178
50	0,474	0,434	0,401	0,372	0,347
60	0,818	0,750	0,692	0,643	0,600
70	1,300	1,192	1,100	1,021	0,953
80	1,942	1,780	1,642	1,525	1,423
90	2,767	2,535	2,340	2,172	2,027
100	3,799	3,481	3,212	2,982	2,782
110	5,064	4,638	4,279	3,972	3,706
120	6,582	6,031	5,563	5,162	4,816
130		7,679	7,085	6,573	6,131
140			8,864	8,225	7,869
150				10,136	9,452
160					11,495

177

177

R = 400

R	400				
L	160	170	180	190	200
<i>l</i>	159,361	169,234	179,091	188,981	198,754
<i>d</i>	79,893	84,872	89,848	94,822	99,792
<i>y_l</i>	10,636	12,003	13,451	14,981	16,592
ΔR	2,663	3,006	3,369	3,753	4,157
<i>e</i>	52,470	55,631	58,771	61,888	64,981
τ_l	11°27'33,0"	12°10'31,3"	12°53'29,6"	13°36'27,9"	14°19'26,2"
ω_l	3°49'06,3"	4°03'24,8"	4°17'43,2"	4°32'01,5"	4°46'19,6"
φ_l	7°38'26,7"	8°07'06,5"	8°35'46,4"	9°04'26,4"	9°33'06,6"
<i>x</i> - 10	0,003	0,002	0,002	0,002	0,002
20	0,021	0,020	0,019	0,018	0,017
30	0,070	0,066	0,063	0,059	0,056
40	0,167	0,157	0,148	0,140	0,133
50	0,326	0,306	0,289	0,274	0,260
60	0,563	0,529	0,500	0,474	0,450
70	0,894	0,841	0,794	0,752	0,715
80	1,334	1,256	1,186	1,123	1,067
90	1,900	1,788	1,689	1,600	1,520
100	2,608	2,454	2,317	2,195	2,085
110	3,473	3,268	3,086	2,923	2,777
120	4,513	4,246	4,009	3,797	3,607
130	5,744	5,404	5,102	4,832	4,589
140	7,185	6,758	6,379	6,041	5,736
150	8,852	8,325	7,857	7,439	7,063
160	10,766	10,122	9,551	9,042	8,584
170	12,944	12,169	11,480	10,865	10,313
180		14,482	13,661	12,926	12,266
190			16,110	15,241	14,460
200				17,829	16,913
210					19,639

178

R = 425

R	425				
L	10	20	30	40	50
<i>l</i>	10,000	19,999	29,996	39,991	49,983
<i>d</i>	5,000	10,000	14,999	19,999	24,997
<i>y_l</i>	0,039	0,157	0,353	0,627	0,980
ΔR	0,010	0,039	0,088	0,157	0,247
<i>e</i>	3,333	6,665	9,995	13,321	16,643
τ_l	0°40'26,6"	1°20'53,3"	2°01'19,9"	2°41'46,6"	3°22'13,2"
ω_l	0°13'28,9"	0°26'57,8"	0°40'26,6"	0°53'55,5"	1°07'24,3"
φ_l	0°26'57,7"	0°53'55,5"	1°20'53,3"	1°47'51,1"	2°14'48,9"
<i>x</i> - 10	0,039	0,020	0,013	0,010	0,008
20	0,275	0,157	0,105	0,078	0,063
30		0,510	0,353	0,265	0,212
40			0,824	0,628	0,502
50				1,217	0,983
60					1,691

12*

179

R	425				
L	60	70	80	90	100
<i>i</i>	59,970	69,953	79,929	89,899	99,862
<i>d</i>	29,995	34,992	39,988	44,983	49,977
<i>y_t</i>	1,411	1,921	2,508	3,174	3,918
ΔR	0,353	0,480	0,627	0,794	0,980
<i>e</i>	19,960	23,289	26,571	29,864	33,147
τ_t	4°02'39,9"	4°43'06,5"	5°23'33,2"	6°03'59,8"	6°44'26,5"
ω_t	1°20'53,1"	1°34'21,8"	1°47'50,6"	2°01'19,3"	2°14'47,9"
σ_t	2°41'46,8"	3°08'44,7"	3°35'42,6"	4°02'40,5"	4°29'38,6"
<i>x</i> = 10	0,007	0,006	0,005	0,004	0,004
20	0,052	0,045	0,039	0,035	0,031
30	0,176	0,151	0,132	0,118	0,106
40	0,418	0,359	0,314	0,279	0,251
50	0,817	0,701	0,613	0,545	0,490
60	1,413	1,211	1,060	0,942	0,847
70	2,240	1,925	1,683	1,496	1,346
80		2,870	2,515	2,235	2,010
90			3,580	3,185	2,865
100				4,370	3,934
110					5,240

R	425				
L	110	120	130	140	150
<i>i</i>	109,816	119,761	129,696	139,621	149,534
<i>d</i>	54,969	59,960	64,949	69,937	74,922
<i>y_t</i>	4,739	5,639	6,616	7,671	8,804
ΔR	1,186	1,411	1,655	1,920	2,203
<i>e</i>	36,418	39,677	42,923	46,154	49,982
τ_t	7°24'53,1"	8°05'19,7"	8°45'46,4"	9°26'13,0"	10°06'39,7"
ω_t	2°28'16,4"	2°41'44,9"	2°55'13,4"	3°08'41,7"	3°22'10,0"
σ_t	4°56'36,7"	5°23'34,8"	5°50'33,0"	6°17'31,3"	6°44'29,7"
<i>x</i> = 10	0,004	0,003	0,003	0,003	0,003
20	0,029	0,026	0,024	0,022	0,021
30	0,096	0,088	0,081	0,076	0,071
40	0,228	0,209	0,193	0,179	0,167
50	0,446	0,409	0,377	0,350	0,327
60	0,770	0,706	0,652	0,605	0,565
70	1,224	1,122	1,035	0,961	0,897
80	1,827	1,675	1,546	1,435	1,339
90	2,603	2,386	2,202	2,044	1,908
100	3,574	3,275	3,022	2,806	2,618
110	4,764	4,364	4,026	3,737	3,487
120	6,190	5,673	5,233	4,857	4,531
130		7,222	6,663	6,183	5,767
140			8,335	7,735	7,213
150				9,529	8,887
160					10,806

R = 425

R	425					
	L	160	170	180	190	200
i	159,434	169,321	179,194	189,053	198,896	
d	79,906	84,887	89,866	94,842	99,816	
y_l	10,014	11,301	12,665	14,106	15,624	
ΔR	2,507	2,829	3,172	3,533	3,914	
e	52,569	55,750	58,911	62,053	65,174	
τ_l	10°47'06,3"	11°27'33,0"	12°07'59,6"	12°48'26,3"	13°28'52,9"	
ω_l	3°35'38,2"	3°49'06,3"	4°02'34,3"	4°16'02,2"	4°29'30,0"	
ρ	7°11'28,1"	7°38'26,7"	8°05'25,3"	8°32'24,1"	8°59'22,9"	
$x = 10$	0,002	0,002	0,002	0,002	0,002	
20	0,020	0,018	0,017	0,017	0,016	
30	0,066	0,062	0,059	0,056	0,053	
40	0,157	0,148	0,139	0,132	0,125	
50	0,306	0,288	0,272	0,258	0,246	
60	0,529	0,498	0,471	0,446	0,424	
70	0,841	0,791	0,747	0,708	0,673	
80	1,256	1,182	1,116	1,057	1,004	
90	1,788	1,688	1,589	1,506	1,430	
100	2,454	2,309	2,181	2,066	1,962	
110	3,268	3,075	2,904	2,751	2,613	
120	4,246	3,995	3,772	3,573	3,394	
130	5,404	5,084	4,800	4,546	4,318	
140	6,758	6,357	6,001	5,683	5,397	
150	8,325	7,829	7,390	6,997	6,644	
160	10,122	9,518	8,982	8,503	8,073	
170	12,166	11,439	10,793	10,216	9,698	
180		13,609	12,840	12,150	11,532	
190			15,137	14,323	13,591	
200				16,748	15,891	
210					18,445	

182

R = 450

R	450					
	L	10	20	30	40	50
i	10,000	19,999	29,997	39,992	49,985	
d	5,000	10,000	14,999	19,999	24,997	
y_l	0,037	0,148	0,333	0,593	0,926	
ΔR	0,009	0,037	0,083	0,148	0,281	
e	3,333	6,665	9,996	13,323	16,646	
τ_l	0°38'11,8"	1°16'23,7"	1°54'35,5"	2°32'47,3"	3°10'59,2"	
ω_l	0°12'43,9"	0°25'27,9"	0°38'11,8"	0°50'55,8"	1°03'39,6"	
ρ_l	0°25'27,9"	0°50'55,8"	1°16'23,7"	1°41'51,5"	2°07'19,6"	
$x = 10$	0,037	0,019	0,012	0,009	0,007	
20	0,259	0,148	0,099	0,074	0,059	
30		0,482	0,333	0,250	0,200	
40			0,778	0,593	0,474	
50				1,149	0,927	
60					1,595	

183

R	450				
L	60	70	80	90	100
t	59,973	69,958	79,937	89,910	99,877
d	29,996	34,993	39,989	44,985	49,979
y_t	1,333	1,814	2,369	2,998	3,700
ΔR	0,333	0,454	0,592	0,750	0,925
e	19,964	23,276	26,581	29,879	33,167
τ_t	3°49'11,0"	4°27'22,8"	5°05'34,7"	5°43'46,5"	6°21'58,3"
ω_t	1°16'23,5"	1°29'07,3"	1°41'51,2"	1°54'34,9"	2°07'18,6"
φ_t	2°32'47,5"	2°58'15,5"	3°23'43,5"	3°49'11,6"	4°14'39,7"
$x = 10$	0,006	0,005	0,005	0,004	0,004
20	0,049	0,042	0,037	0,033	0,030
30	0,167	0,143	0,125	0,111	0,100
40	0,395	0,339	0,296	0,263	0,237
50	0,772	0,662	0,579	0,515	0,463
60	1,335	1,144	1,001	0,889	0,800
70	2,115	1,817	1,590	1,413	1,271
80		2,710	2,375	2,110	1,898
90			3,380	3,007	2,705
100				4,125	3,714
110					4,946

R	450				
L	110	120	130	140	150
t	109,836	119,787	129,729	139,662	149,584
d	54,973	59,964	64,955	69,944	74,931
y_t	4,477	5,327	6,250	7,247	8,317
ΔR	1,120	1,333	1,564	1,813	2,081
e	36,445	39,712	42,967	46,210	49,438
τ_t	7°00'10,1"	7°38'22,0"	8°16'33,8"	8°54'45,6"	9°32'57,5"
ω_t	2°20'02,3"	2°32'45,9"	2°45'29,5"	2°58'13,0"	3°10'56,4"
φ_t	4°40'07,8"	5°05'36,1"	5°31'04,3"	5°56'32,6"	6°22'01,1"
$x = 10$	0,003	0,003	0,003	0,003	0,002
20	0,027	0,025	0,023	0,021	0,020
30	0,091	0,083	0,077	0,071	0,067
40	0,216	0,197	0,182	0,169	0,158
50	0,421	0,386	0,356	0,331	0,309
60	0,727	0,667	0,616	0,572	0,533
70	1,156	1,059	0,978	0,908	0,847
80	1,726	1,582	1,460	1,355	1,265
90	2,458	2,253	2,079	1,930	1,801
100	3,375	3,092	2,854	2,649	2,472
110	4,497	4,120	3,801	3,529	3,292
120	5,843	5,355	4,940	4,585	4,278
130		6,816	6,289	5,836	5,444
140			7,865	7,300	6,808
150				8,991	8,387
160					10,195

R	450					
	L	160	170	180	190	200
<i>l</i>	159,495	169,394	179,281	189,155	199,015	
<i>d</i>	79,916	84,899	89,880	94,859	99,836	
<i>y_l</i>	9,460	10,676	11,966	13,328	14,763	
ΔR	2,368	2,672	2,996	3,337	3,697	
<i>e</i>	52,651	55,849	59,029	62,191	65,335	
τ_l	10°11'09,3"	10°49'21,1"	11°27'33,0"	12°05'44,8"	12°43'56,6"	
ω_l	3°23'39,8"	3°36'23,1"	3°49'06,3"	4°01'49,5"	4°14'32,5"	
φ_l	6°47'29,5"	7°12'58,0"	7°38'26,7"	8°03'55,3"	8°29'24,1"	
<i>x</i> = 10	0,002	0,002	0,002	0,002	0,002	
20	0,019	0,017	0,016	0,016	0,015	
30	0,063	0,059	0,056	0,053	0,050	
40	0,148	0,139	0,132	0,125	0,119	
50	0,289	0,272	0,257	0,244	0,231	
60	0,500	0,471	0,444	0,421	0,400	
70	0,794	0,747	0,706	0,669	0,635	
80	1,186	1,116	1,054	0,998	0,948	
90	1,689	1,589	1,501	1,422	1,351	
100	2,317	2,181	2,059	1,951	1,853	
110	3,086	2,904	2,742	2,598	2,467	
120	4,009	3,772	3,562	3,374	3,205	
130	5,102	4,800	4,532	4,292	4,077	
140	6,379	6,001	5,665	5,365	5,095	
150	7,857	7,390	6,975	6,605	6,273	
160	9,551	8,982	8,477	8,026	7,621	
170	11,477	10,793	10,184	9,640	9,152	
180		12,836	12,112	11,463	10,881	
190			14,275	13,510	12,821	
200				15,793	14,986	
210					17,390	

R	475					
	L	10	20	30	40	50
<i>l</i>	10,000	19,999	29,997	39,998	49,986	
<i>d</i>	5,000	10,000	14,999	19,999	24,998	
<i>y_l</i>	0,035	0,140	0,316	0,561	0,877	
ΔR	0,009	0,035	0,079	0,140	0,219	
<i>e</i>	3,333	6,666	9,996	13,324	16,648	
τ_l	0°36'11,2"	1°12'22,4"	1°48'33,6"	2°24'44,8"	3°00'56,0"	
ω_l	0°12'03,7"	0°24'07,5"	0°36'11,2"	0°48'14,9"	1°00'18,6"	
φ_l	0°24'07,5"	0°48'14,9"	1°12'22,4"	1°36'29,9"	2°00'37,4"	
<i>x</i> = 10	0,035	0,018	0,012	0,009	0,007	
20	0,246	0,140	0,094	0,070	0,056	
30		0,456	0,316	0,237	0,189	
40			0,737	0,562	0,449	
50				1,089	0,878	
60					1,511	

R	475					
	L	60	70	80	90	100
<i>l</i>	59,976	69,962	79,943	89,919	99,889	
<i>d</i>	29,996	34,994	39,991	44,987	49,982	
<i>y_l</i>	1,263	1,719	2,244	2,840	3,506	
ΔR	0,316	0,430	0,561	0,710	0,877	
<i>e</i>	19,968	23,282	26,590	29,891	33,184	
τ_l	3°37'07,3"	4°18'18,5"	4°49'29,7"	5°25'40,9"	6°01'52,1"	
ω_l	1°12'22,3"	1°24'25,9"	1°36'29,5"	1°48'33,1"	2°00'36,7"	
φ_l	2°24'45,0"	2°48'52,6"	3°13'00,2"	3°37'07,8"	4°01'15,4"	
<i>x</i> - 10	0,006	0,005	0,004	0,004	0,004	
20	0,047	0,040	0,035	0,031	0,028	
30	0,158	0,135	0,118	0,105	0,095	
40	0,374	0,321	0,281	0,250	0,225	
50	0,731	0,627	0,548	0,487	0,439	
60	1,264	1,083	0,948	0,842	0,758	
70	2,003	1,721	1,506	1,338	1,204	
80		2,567	2,249	1,999	1,798	
90			3,201	2,848	2,562	
100				3,907	3,518	
110					4,684	

R	475					
	L	110	120	130	140	150
<i>l</i>	109,853	119,809	129,757	139,696	149,626	
<i>d</i>	54,975	59,968	64,959	69,949	74,938	
<i>y_l</i>	4,242	5,047	5,922	6,867	7,881	
ΔR	1,061	1,262	1,482	1,718	1,972	
<i>e</i>	36,468	39,742	43,005	46,257	49,496	
τ_l	6°38'03,3"	7°14'14,5"	7°50'25,7"	8°26'36,9"	9°02'48,1"	
ω_l	2°12'40,2"	2°24'43,7"	2°36'47,1"	2°48'50,4"	3°00'53,8"	
φ_l	4°25'23,1"	4°49'30,8"	5°13'38,6"	5°37'46,5"	6°01'54,3"	
<i>x</i> - 10	0,003	0,003	0,003	0,003	0,002	
20	0,026	0,023	0,022	0,020	0,019	
30	0,086	0,079	0,073	0,068	0,063	
40	0,204	0,187	0,173	0,160	0,150	
50	0,399	0,366	0,337	0,313	0,292	
60	0,689	0,632	0,583	0,541	0,505	
70	1,095	1,003	0,926	0,860	0,803	
80	1,635	1,498	1,383	1,284	1,198	
90	2,329	2,134	1,970	1,829	1,707	
100	3,197	2,929	2,703	2,510	2,342	
110	4,259	3,902	3,600	3,342	3,119	
120	5,533	5,071	4,679	4,343	4,052	
130		6,453	5,956	5,527	5,156	
140			7,446	6,912	6,447	
150				8,512	7,940	
160					9,650	

R	475				
L	160	170	180	190	200
<i>t</i>	159,547	169,456	179,355	189,241	199,115
<i>d</i>	79,924	84,909	89,892	94,873	99,852
<i>y_t</i>	8,964	10,117	11,339	12,631	13,991
ΔR	2,243	2,532	2,839	3,162	3,503
<i>e</i>	52,721	55,932	59,128	62,308	65,471
τ_t	9°38'59,3"	10°15'10,5"	10°51'21,8"	11°27'33,0"	12°03'44,2"
ω_t	3°12'57,0"	3°25'00,2"	3°37'03,3"	3°49'06,3"	4°01'09,3"
φ_t	6°26'02,3"	6°50'10,3"	7°14'18,5"	7°38'26,7"	8°02'34,9"
<i>x</i> = 10	0,002	0,002	0,002	0,002	0,002
20	0,018	0,017	0,016	0,015	0,014
30	0,059	0,056	0,053	0,050	0,047
40	0,140	0,132	0,125	0,118	0,112
50	0,274	0,258	0,244	0,231	0,219
60	0,474	0,446	0,421	0,399	0,379
70	0,752	0,708	0,669	0,634	0,602
80	1,123	1,057	0,998	0,946	0,898
90	1,600	1,506	1,422	1,347	1,279
100	2,195	2,066	1,951	1,848	1,755
110	2,923	2,751	2,598	2,461	2,337
120	3,797	3,573	3,374	3,196	3,036
130	4,832	4,546	4,292	4,065	3,861
140	6,041	5,683	5,365	5,081	4,826
150	7,439	6,997	6,605	6,255	5,940
160	9,042	8,503	8,026	7,599	7,216
170	10,862	10,216	9,640	9,127	8,665
180		12,148	11,464	10,851	10,301
190			13,507	12,785	12,135
200				14,942	14,181
210					16,451

R	500				
L	10	20	30	40	50
<i>t</i>	10,000	19,999	29,997	39,994	49,988
<i>d</i>	5,000	10,000	15,000	19,999	24,998
<i>y_t</i>	0,033	0,133	0,300	0,533	0,833
ΔR	0,008	0,033	0,075	0,133	0,208
<i>e</i>	3,333	6,666	9,996	13,325	16,650
τ_t	0°34'22,7"	1°08'45,3"	1°43'07,9"	2°17'30,6"	2°51'53,2"
ω_t	0°11'27,6"	0°22'55,1"	0°34'22,6"	0°45'50,2"	0°57'17,7"
φ_t	0°22'55,1"	0°45'50,2"	1°08'45,3"	1°31'40,4"	1°54'35,5"
<i>x</i> = 10	0,033	0,017	0,011	0,008	0,007
20	0,233	0,133	0,089	0,067	0,053
30		0,433	0,300	0,225	0,180
40			0,700	0,534	0,427
50				1,034	0,834
60					1,435

R = 500

R	500				
L	60	70	80	90	100
l	59,978	69,966	79,949	89,927	99,900
d	29,996	34,994	39,991	44,988	49,983
y_l	1,200	1,633	2,132	2,698	3,331
ΔR	0,300	0,408	0,533	0,675	0,833
e	19,971	23,287	26,598	29,902	33,198
τ_l	3°26'15,3"	4°00'38,5"	4°35'01,2"	5°09'28,8"	5°43'46,5"
ω_l	1°08'45,2"	1°20'12,7"	1°31'40,1"	1°43'07,5"	1°54'34,9"
ζ_l	2°17'30,7"	2°40'25,8"	3°03'21,1"	3°26'16,3"	3°49'11,6"
$x = 10$	0,006	0,005	0,004	0,004	0,003
20	0,044	0,038	0,033	0,030	0,027
30	0,150	0,129	0,113	0,100	0,090
40	0,356	0,305	0,267	0,237	0,213
50	0,695	0,595	0,521	0,463	0,417
60	1,201	1,029	0,900	0,800	0,720
70	1,903	1,635	1,430	1,271	1,144
80		2,438	2,137	1,898	1,708
90			3,040	2,705	2,434
100				3,710	3,341
110					4,448

192

R = 500

R	500				
L	110	120	130	140	150
l	109,867	119,827	129,780	139,726	149,663
d	54,978	59,971	64,963	69,954	74,944
y_l	4,090	4,795	5,627	6,524	7,488
ΔR	1,008	1,199	1,407	1,632	1,874
e	36,487	39,767	43,037	46,297	49,545
τ_l	6°18'09,1"	6°52'31,8"	7°26'54,4"	8°01'17,1"	8°35'39,7"
ω_l	2°06'02,3"	2°17'20,6"	2°28'56,9"	2°40'24,1"	2°51'51,3"
ζ_l	4°12'06,8"	4°35'02,2"	4°57'57,5"	5°20'53,0"	5°43'48,4"
$x = 10$	0,003	0,003	0,003	0,002	0,002
20	0,024	0,022	0,021	0,019	0,018
30	0,082	0,075	0,069	0,064	0,060
40	0,194	0,178	0,164	0,152	0,142
50	0,379	0,347	0,321	0,298	0,278
60	0,655	0,600	0,554	0,514	0,480
70	1,040	0,953	0,880	0,817	0,762
80	1,553	1,423	1,314	1,220	1,138
90	2,212	2,027	1,871	1,737	1,621
100	3,036	2,782	2,568	2,384	2,224
110	4,045	3,706	3,420	3,174	2,962
120	5,254	4,816	4,443	4,124	3,848
130		6,128	5,655	5,249	4,896
140			7,070	6,563	6,122
150				8,081	7,539
160					9,161

193

193

R = 500

R	500				
L	160	170	180	190	200
<i>i</i>	159,591	169,509	179,418	189,315	199,201
<i>d</i>	79,982	84,918	89,903	94,886	99,867
<i>y_l</i>	8,518	9,613	10,775	12,002	13,295
ΔR	2,131	2,406	2,697	3,005	3,329
<i>e</i>	52,781	56,004	59,213	62,408	65,588
τ_l	9°10'02,4"	9°44'25,0"	10°18'47,7"	10°53'10,3"	11°27'33,0"
ω_l	3°03'18,4"	3°14'45,5"	3°26'12,5"	3°37'39,4"	3°49'06,3"
φ_l	6°06'44,0"	6°29'39,5"	6°52'35,2"	7°15'30,9"	7°38'26,7"
<i>x</i> = 10	0,002	0,002	0,002	0,002	0,002
20	0,017	0,016	0,015	0,014	0,013
30	0,056	0,053	0,050	0,047	0,045
40	0,133	0,125	0,119	0,112	0,107
50	0,260	0,245	0,231	0,219	0,208
60	0,450	0,424	0,400	0,379	0,360
70	0,715	0,673	0,635	0,602	0,572
80	1,067	1,004	0,948	0,898	0,854
90	1,520	1,430	1,351	1,279	1,215
100	2,085	1,962	1,853	1,755	1,668
110	2,777	2,613	2,467	2,337	2,220
120	3,607	3,394	3,205	3,036	2,883
130	4,589	4,318	4,077	3,861	3,668
140	5,736	5,397	5,095	4,826	4,583
150	7,063	6,644	6,273	5,940	5,641
160	8,584	8,073	7,621	7,216	6,852
170	10,311	9,698	9,152	8,665	8,228
180		11,530	10,881	10,301	9,779
190			12,819	12,135	11,518
200				14,178	13,458
210					15,609

R = 550

R	550				
L	10	20	30	40	50
<i>i</i>	10,000	19,999	29,998	39,995	49,990
<i>d</i>	5,000	10,000	15,000	19,999	24,998
<i>y_l</i>	0,030	0,121	0,273	0,485	0,757
ΔR	0,008	0,030	0,068	0,121	0,189
<i>e</i>	3,333	6,666	9,997	13,326	16,653
τ_l	0°31'15,1"	1°02'30,3"	1°33'45,4"	2°05'00,5"	2°36'15,7"
ω_l	0°10'25,1"	0°20'50,1"	0°31'15,1"	0°41'40,2"	0°52'05,2"
φ_l	0°20'50,0"	0°41'40,2"	1°02'30,3"	1°23'20,3"	1°44'10,5"
<i>x</i> = 10	0,030	0,015	0,010	0,008	0,006
20	0,212	0,121	0,081	0,061	0,048
30		0,394	0,273	0,205	0,164
40			0,637	0,485	0,388
50				0,940	0,758
60					1,304