



Aula prática 5 – Interpolação

Disciplinas: Topografia I

Professor: Alexandre Bernardino Lopes

Assunto: Levantamento Planialtimétrico

Turma:

Interpolação de dados para representação de relevo topográfico.

Introdução

A Aula Prática 05 tem como objetivo familiarizar o discente com a interpolação de dados. Serão fornecidos dados (ANEXO 1) que poderão ser copiados e colados em uma planilha eletrônica para inserção de dados no software que será usado para interpolar.

Atividades a serem desenvolvidas.

1) Com os dados de altimetria fornecidos (ANEXO 1) faça.

a) Insira os pontos fornecidos no Qgis;

b) Interpole os dados de altimetria e elabore um Modelo Digital de Elevação (MDE);

c) Apresente no mapa altimétrico a escala gráfica, legenda, moldura, grades, coordenadas, dados do autor, conforme exemplo da figura que segue.

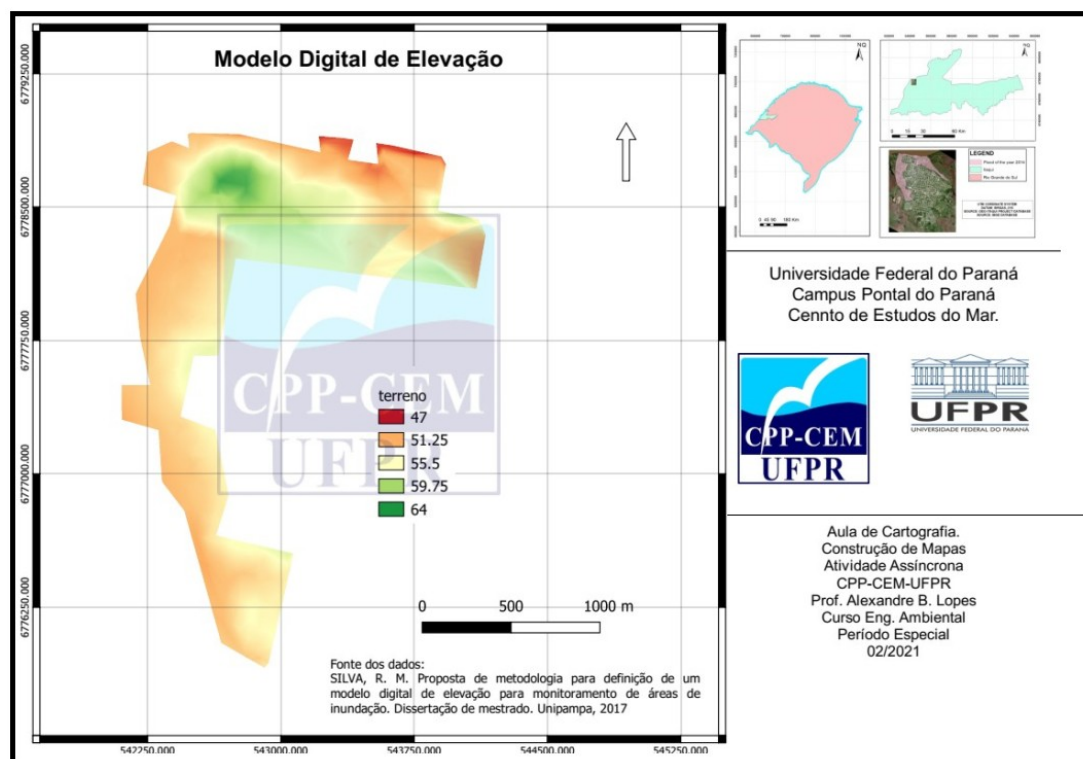


Figura 1 – Exemplo de MDE gerado.

ANEXO 1

Os dados que seguem devem ser copiados em uma planilha eletrônica e inserido no Qgis.
As coordenadas X e Y são coordenadas UTM e as coordenadas Z são altitudes ortométricas.

Os dados foram obtidos de:

SILVA, R. M. Proposta de metodologia para definição de um modelo digital de elevação para monitoramento de áreas de inundação. Dissertação de mestrado. Unipampa, 2017.

X	Y	Z
543132,164	6778417,879	58,422
543134,615	6778794,301	52,222
543079,090	6778805,334	52,588
543026,410	6778806,562	53,068
543604,100	6778509,662	53,249
543650,484	6778499,907	53,042
543637,331	6778393,902	52,637
543608,798	6778392,870	52,573
543403,666	6778436,433	55,549
543414,845	6778294,931	54,559
543472,142	6778293,105	54,172
543503,143	6778277,323	53,769
543555,119	6778266,389	54,469
543155,341	6778790,883	52,066
543105,736	6778800,548	52,324
543059,158	6778809,457	52,780
543536,664	6778526,483	54,379
543628,826	6778513,673	53,247
543679,150	6778495,315	53,104
543659,154	6778390,081	52,611
543574,431	6778408,297	52,944
543424,073	6778433,224	55,191
543377,127	6778301,266	54,139
543441,487	6778299,888	54,308
543579,273	6778261,668	55,140
543602,618	6778256,928	56,042
543871,074	6778454,165	55,949
543897,226	6778447,657	56,327
543889,572	6778350,028	52,415
543909,639	6778344,017	52,060
543986,035	6778328,708	51,463
543990,136	6778469,349	59,326
544044,154	6778417,688	56,718
544124,067	6778380,042	54,371
544113,877	6778305,383	50,668
544079,281	6778151,961	50,576
544132,939	6778007,340	53,103
543909,756	6778440,671	56,396
543907,697	6778422,011	55,859
543904,607	6778387,007	54,391
543930,833	6778340,937	51,890
543961,719	6778334,316	51,792
543987,854	6778440,157	57,757
544071,495	6778409,435	56,026
544115,024	6778346,298	51,773
544165,847	6778299,054	50,485
544075,405	6778124,943	50,937
544115,206	6778012,447	53,517
543940,470	6778437,926	56,965
543962,997	6778434,116	57,242
543971,243	6778398,842	55,479
543966,249	6778371,904	53,834
543962,766	6778350,909	52,435
544004,819	6778432,846	57,710
544094,271	6778404,751	55,860
544118,232	6778358,575	52,369
544094,742	6778243,092	50,319
544056,496	6778060,888	54,387
544092,528	6778017,838	54,253
544158,088	6777999,225	52,425
543918,642	6778442,028	56,669
543979,643	6778428,534	57,390
543973,592	6778408,933	56,123
543968,600	6778382,980	54,520
543964,111	6778360,938	53,100
544020,108	6778421,178	57,379
544124,246	6778398,817	55,082

544119,938	6778369,783	53,447
544085,754	6778194,762	50,337
544049,450	6778034,974	56,451
544059,005	6778021,193	56,395
544185,804	6777992,276	51,514
542251,834	6778810,088	51,866
542360,456	6778614,306	52,976
542422,222	6778608,270	55,264
542493,659	6778617,450	57,536
542509,793	6778712,012	56,036
542333,428	6778784,447	52,120
542228,833	6778666,877	52,158
542228,832	6778666,872	52,145
542398,571	6778610,725	54,098
542464,620	6778597,222	56,275
542506,638	6778693,884	56,380
542267,644	6778655,271	52,117
542447,357	6778601,461	55,853
542485,539	6778593,727	57,367
542497,948	6778646,149	57,228
542293,956	6778646,471	52,284
542375,669	6778615,130	53,317
542499,374	6778592,691	57,848
542503,484	6778674,009	56,862
542477,169	6778482,686	57,604
542496,095	6777724,874	55,822
542359,514	6777749,685	53,930
542464,942	6778415,016	55,502
542426,051	6778354,417	52,189
542425,464	6778205,365	52,324
542405,005	6778081,794	52,814
542386,313	6777972,262	52,673
542368,862	6777864,535	53,059
542312,929	6777917,072	52,438
542339,017	6778075,191	52,354
542403,486	6778214,117	52,040
542333,410	6777686,933	54,295
542344,501	6777601,590	54,079
542405,446	6777589,461	55,171
542299,260	6777536,513	53,356
542168,328	6777473,239	52,408
542280,317	6777407,525	53,032
542141,082	6777331,304	51,746
542396,891	6777244,411	53,205
542382,477	6777164,984	52,633
542425,803	6777432,798	54,876
542438,128	6777468,977	55,399
542483,921	6777667,490	55,958
542469,871	6778445,815	56,372
542459,269	6777568,202	55,936
542462,169	6778406,011	55,192
542455,300	6778369,445	53,362
542411,679	6777738,551	54,840
542264,605	6777759,668	52,904
542438,369	6778269,668	52,065
542411,093	6778118,592	52,596
542391,511	6777996,794	52,653
542374,299	6777900,493	53,012
542277,209	6777921,824	52,189
542297,184	6778086,190	52,002
542328,024	6778230,351	51,951
542345,571	6777743,437	53,709
542313,882	6777604,811	53,869
542379,606	6777594,619	54,479
542282,552	6777460,362	53,088
542105,621	6777487,326	52,327
542184,429	6777323,787	52,045
542107,085	6777335,918	51,405
542397,068	6777277,733	53,076
542413,104	6777349,665	53,791
542425,647	6777414,273	54,545
542300,695	6777447,558	53,226
542449,705	6777525,798	55,754
542460,440	6777568,132	56,024
542473,537	6778468,163	57,167
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542447,346	6778334,018	52,167
542468,254	6777728,846	55,572
542433,061	6778238,446	52,290
542342,248	6777751,981	53,552
542415,861	6778148,015	52,358
542224,653	6777772,100	52,280
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542237,161	6777928,953	51,861
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542340,658	6777719,647	54,013
542320,578	6777632,053	53,957
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542212,847	6777462,602	52,802
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542266,732	6777365,925	52,810
542343,790	6777288,245	52,886
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542346,304	6777441,365	53,696
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542471,351	6778455,322	56,657
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542467,363	6777605,795	56,030
542452,589	6778355,330	52,663
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542442,830	6778298,509	52,057
542433,257	6777736,013	55,216
542421,599	6778176,640	52,298
542306,834	6777757,691	53,223
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542378,706	6777923,536	52,938
542356,362	6777804,754	53,264
542348,023	6777758,557	53,597
542199,249	6777935,861	51,700
542399,148	6778062,023	52,802
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542252,758	6777462,036	53,076
542135,430	6777480,499	52,365
542254,322	6777311,193	52,505
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543211,477	6778691,166	53,164
543711,030	6778708,046	52,591
543201,076	6778647,344	55,144
543751,045	6778801,757	47,426
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543305,160	6778649,632	54,511
543542,752	6778613,877	51,381
543308,288	6778688,973	53,638
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543269,153	6778750,870	51,834
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543349,357	6778863,069	48,935
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543240,532	6778784,573	51,590
543238,334	6778890,059	48,238
543339,572	6778734,562	52,108
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543433,630	6778647,456	51,726
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543574,904	6778722,403	50,285
543582,563	6778786,790	52,227
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543203,896	6778658,171	54,631
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543199,830	6778611,976	56,344
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543328,156	6778776,604	51,436
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543345,663	6778847,699	49,096
543350,610	6778870,147	48,955
543252,817	6778832,227	51,664
543243,003	6778864,171	49,720
543359,868	6778729,941	51,869
543385,315	6778690,604	51,809
543360,020	6778609,830	55,563
543419,475	6778581,703	55,000
543439,109	6778669,723	51,260
543496,964	6778715,966	49,709
543575,250	6778736,990	50,286
543578,567	6778772,741	51,847
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543225,952	6778760,223	51,730
543723,711	6778657,129	52,417
543219,334	6778710,949	52,664
543736,809	6778768,223	51,407
543207,152	6778677,334	53,653
543747,937	6778790,419	49,263
543198,744	6778639,558	55,456
543707,248	6778579,512	52,270
543137,610	6778621,568	56,175
543255,679	6778585,406	56,193
543534,431	6778570,968	52,620
543290,633	6778617,241	55,288
543309,899	6778666,460	54,089
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543337,348	6778813,384	50,184
543342,748	6778836,404	49,447
543352,713	6778878,367	48,891
543248,362	6778847,159	50,965
543237,174	6778897,709	47,370
543390,540	6778721,345	51,792
543368,260	6778648,295	53,177
543353,185	6778577,921	56,367
543430,900	6778629,501	52,687
543443,986	6778696,097	50,995
543541,992	6778699,883	49,556
543573,917	6778751,449	50,970
543586,269	6778817,691	50,384
543180,457	6778775,665	52,059
543576,576	6778808,240	51,871
543223,393	6778747,864	51,845
543557,678	6778841,272	47,902
543213,660	6778701,674	52,901
543580,168	6778694,095	50,319
543205,593	6778666,576	54,214
543194,860	6778622,688	56,040
543219,933	6778603,787	56,368
543725,988	6778681,696	52,284
543284,584	6778593,420	55,878
543743,170	6778777,915	50,993
543301,137	6778626,944	55,060
543715,713	6778619,234	52,222
543304,339	6778677,072	53,860
543533,603	6778545,515	53,919
543319,189	6778749,869	52,183
543319,620	6778760,737	51,986
543332,798	6778791,992	50,955
543339,213	6778820,968	49,934
543347,540	6778855,870	48,910
543352,180	6778885,259	48,814
543245,833	6778804,986	51,606
543240,006	6778878,898	48,829
543375,828	6778726,810	51,783
543378,772	6778708,232	51,771
543417,742	6778565,443	55,661
543453,935	6778723,884	50,790
543474,690	6778719,733	50,244
543560,993	6778703,022	49,947
543822,823	6778462,640	54,972
543752,740	6778478,877	53,104
543688,261	6778482,797	52,626
543668,061	6778389,358	52,545
543777,630	6778363,727	52,450
543824,447	6778473,735	55,173
543846,768	6778566,508	55,176
543875,211	6778686,740	52,002

543886,264	6778808,209	47,889
543786,635	6778280,931	53,219
543817,368	6778224,806	54,471
543933,244	6778194,746	53,081
543927,668	6778164,683	54,605
543848,823	6778457,426	55,371
543776,699	6778473,161	53,504
543679,611	6778446,645	52,342
543707,114	6778375,482	52,470
543813,504	6778399,927	52,915
543821,992	6778439,036	53,997
543843,019	6778513,223	55,803
543859,335	6778611,861	52,841
543879,920	6778711,403	51,881
543892,139	6778772,662	50,192
543790,622	6778305,475	52,819
543791,740	6778230,084	55,095
543901,151	6778201,742	53,782
543947,789	6778281,371	51,724
543957,437	6778323,850	51,457
543807,048	6778466,273	54,549
543729,492	6778483,531	52,947
543685,545	6778469,605	52,406
543678,361	6778384,638	52,564
543803,418	6778359,643	52,638
543816,601	6778413,581	53,077
543841,152	6778495,533	55,614
543844,069	6778549,955	55,655
543871,301	6778665,278	52,162
543889,479	6778751,843	51,226
543887,674	6778801,023	48,793
543802,923	6778352,283	52,591
543774,631	6778237,683	55,314
543832,566	6778220,850	54,517
543938,026	6778216,352	52,413
543913,951	6778133,968	57,603
543837,421	6778459,342	55,219
543795,508	6778468,832	54,036
543695,865	6778490,819	52,884
543672,161	6778410,174	52,450
543748,248	6778369,448	52,455
543809,550	6778381,766	52,738
543826,079	6778458,909	55,018
543846,999	6778530,960	56,014
543866,086	6778642,005	52,313
543889,773	6778789,724	49,156
543795,738	6778324,205	52,659
543782,991	6778263,177	53,549
543856,673	6778215,531	54,462
543941,988	6778252,610	51,913
543958,006	6778301,873	51,494
542856,367	6778274,777	55,545
542427,796	6777889,332	53,133
542750,913	6778299,149	54,531
542505,394	6778043,801	53,223
542658,146	6778311,721	52,622
542536,116	6777249,641	54,553
542520,754	6778331,260	51,914
542551,548	6777223,139	54,688
542592,594	6778286,868	52,321
542521,827	6777112,756	53,866
542569,784	6778150,809	53,248
542541,001	6777102,501	53,999
542549,017	6778036,961	53,650
542623,907	6777086,760	54,520
542540,795	6777979,043	53,811
542675,744	6777067,968	55,249
542516,763	6777838,584	54,422
542505,094	6776979,930	52,755
542495,862	6777725,163	55,745
542595,046	6777705,382	56,402
542640,824	6777766,638	55,655
542629,854	6777859,356	54,677
542670,946	6777926,140	54,936
542665,803	6778012,500	54,630
542561,557	6778032,999	53,778
542703,021	6778038,932	54,804
542710,516	6778145,024	54,516
542654,030	6778159,782	53,753
542585,684	6778175,405	53,141
542532,382	6778187,204	52,653
542509,485	6778332,477	51,879
542611,697	6778379,038	55,041
542718,977	6778183,988	54,493

542836,251	6778278,326	55,320
542720,676	6778300,137	53,614
542396,720	6777895,065	52,950
542547,215	6778325,421	52,007
542501,941	6777882,708	53,685
542588,196	6778260,056	52,492
542475,543	6778049,965	52,869
542573,401	6778171,563	53,019
542473,748	6777269,871	53,628
542557,080	6778076,227	53,401
542556,547	6778073,467	53,529
542527,559	6777143,754	54,016
542534,351	6777943,133	54,034
542472,886	6777107,176	52,990
542523,519	6777879,128	54,071
542598,803	6777090,540	54,403
542501,624	6777753,672	55,515
542522,818	6777079,944	53,276
542540,540	6777708,047	56,060
542511,412	6777020,337	52,876
542631,810	6777719,262	56,265
542605,166	6777864,625	54,620
542676,992	6777901,483	55,049
542690,801	6777973,024	54,983
542631,412	6778009,029	54,268
542698,043	6778070,409	54,750
542688,801	6778160,572	54,143
542602,310	6778173,931	53,261
542467,894	6778198,648	52,077
542603,076	6778333,379	52,511
542617,569	6778409,381	55,818
542737,321	6778279,128	54,295
542526,764	6778039,684	53,247
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542424,333	6778060,539	52,573
542590,839	6778317,187	52,099
542442,762	6777267,577	53,203
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542582,096	6778228,305	52,455
542534,688	6777194,930	54,022
542562,020	6778102,473	53,349
542444,968	6777116,376	52,908
542543,731	6778001,432	53,706
542559,779	6777088,826	53,796
542520,807	6777864,477	54,145
542513,082	6777055,743	52,867
542508,412	6777789,239	54,871
542508,632	6776999,149	52,607
542567,792	6777711,197	56,186
542627,743	6777702,752	56,410
542649,373	6777813,010	55,105
542571,268	6777869,916	54,278
542671,454	6777871,813	54,944
542683,523	6777996,922	54,777
542586,036	6778028,369	53,840
542713,774	6778098,478	54,630
542623,937	6778174,788	53,213
542557,603	6778187,662	52,714
542435,484	6778205,015	51,991
542478,274	6778346,102	51,889
542608,937	6778362,957	53,688
542721,799	6778205,243	54,309
542446,073	6777885,890	53,154
542878,385	6778270,091	55,758
542737,658	6778299,597	54,082
542480,542	6777884,354	53,671
542614,982	6778320,712	52,332
542447,016	6778055,998	52,756
542497,997	6778343,229	51,957
542505,258	6777254,806	54,126
542573,181	6778187,780	52,923
542614,517	6777233,075	55,205
542566,860	6778127,138	53,444
542540,845	6777169,321	54,127
542547,834	6778022,517	53,685
542503,058	6777108,076	53,608
542547,822	6778022,511	53,680
542419,102	6777121,715	52,740
542531,284	6777919,695	54,058
542650,568	6777081,274	54,757
542513,022	6777813,694	54,662
542501,345	6776953,596	52,658
542510,168	6777714,156	55,856

542615,718	6777701,600	56,411
542647,323	6777739,649	55,996
542655,251	6777841,349	55,089
542534,269	6777877,559	54,228
542676,760	6777955,208	54,915
542605,023	6778015,277	54,122
542688,414	6778017,781	54,823
542706,539	6778117,068	54,561
542706,572	6778147,178	54,319
542704,518	6778158,756	54,348
542512,032	6778190,380	52,438
542605,587	6778344,146	52,771
542120,931	6776720,437	51,297
542361,270	6777071,817	52,278
542168,096	6776791,399	51,726
542371,199	6777120,815	52,501
542195,941	6776841,150	51,861
542389,138	6777124,312	52,499
542207,286	6776862,042	51,519
542240,005	6776918,128	51,371
542265,946	6776968,727	51,548
542298,679	6777002,115	51,779
542328,115	6776993,532	51,733
542385,498	6776981,546	52,064
542490,284	6776935,195	52,705
542488,079	6776887,744	52,673
542471,300	6776822,388	52,324
542509,911	6776803,676	52,421
542542,288	6776795,516	52,744
542597,220	6776786,759	53,511
542636,351	6776784,810	54,321
542648,484	6776851,473	54,300
542662,532	6776918,870	54,778
542650,222	6776924,582	54,307
542601,302	6776940,689	53,549
542567,698	6776948,046	53,111
542516,772	6776957,292	52,848
542350,692	6777027,345	52,066
542145,450	6776750,370	51,545
542371,911	6777130,250	52,539
542179,008	6776811,199	51,866
542186,349	6776825,834	52,152
542225,783	6776894,666	51,412
542251,650	6776941,563	51,478
542284,083	6776996,331	51,617
542309,638	6776997,485	51,734
542353,945	6776990,088	51,939
542441,603	6776969,207	52,388
542492,262	6776961,362	52,647
542486,549	6776910,942	52,675
542475,913	6776853,382	52,365
542490,157	6776807,039	52,268
542521,891	6776799,340	52,533
542574,607	6776790,394	53,066
542612,986	6776784,020	53,795
542643,723	6776822,602	54,281
542656,035	6776885,167	54,492
542631,723	6776934,753	53,891
542582,753	6776944,611	53,288
542546,535	6776951,964	53,012
542345,082	6777005,327	52,058
542356,547	6777054,127	52,196
542366,197	6777093,650	52,283
542634,000	6776770,376	54,354
542876,754	6776456,607	53,829
542566,137	6776640,314	52,875
542881,387	6776442,063	53,732
542541,954	6776644,750	51,948
542577,334	6776506,272	51,480
542642,344	6776466,360	52,239
542700,164	6776455,408	52,809
542707,484	6776393,148	52,315
542699,878	6776310,086	52,580
542730,238	6776306,214	53,576
542841,990	6776271,448	55,299
542783,729	6776143,171	54,801
542754,506	6776140,395	54,442
542814,048	6776107,629	54,917
542798,894	6776011,555	53,418
542796,218	6775950,583	53,017
542783,320	6775882,883	53,454
542766,478	6775790,771	54,358
542870,072	6776372,035	53,907
542874,404	6776397,172	53,725

542794,899	6776447,069	52,795
542724,858	6776487,853	53,389
542741,435	6776530,909	54,451
542772,220	6776592,970	55,796
542839,656	6776590,300	55,716
542619,738	6776742,089	54,310
542584,220	6776637,448	53,619
542524,755	6776650,457	51,417
542582,845	6776533,157	51,989
542618,562	6776477,234	52,048
542719,176	6776452,746	52,899
542697,899	6776345,957	52,332
542682,934	6776245,661	52,397
542778,416	6776290,176	54,598
542826,249	6776169,912	55,522
542803,894	6776130,356	54,866
542739,447	6776144,212	53,860
542804,971	6776055,947	54,173
542798,728	6775972,034	52,242
542788,741	6775907,349	53,323
542777,866	6775840,102	54,193
542863,033	6776331,339	54,407
542868,641	6776424,253	53,590
542763,175	6776451,957	52,966
542727,632	6776460,496	52,919
542745,432	6776548,421	54,788
542754,648	6776594,386	55,494
542900,750	6776540,488	54,814
542895,577	6776512,265	54,265
542615,175	6776719,818	54,104
542893,080	6776561,613	55,352
542602,916	6776654,838	54,053
542888,343	6776474,275	53,900
542590,420	6776556,966	52,373
542596,068	6776477,721	51,685
542671,990	6776466,233	52,486
542702,001	6776370,214	52,375
542686,652	6776286,388	52,471
542749,510	6776297,327	53,892
542846,280	6776241,293	55,549
542831,446	6776151,925	55,239
542698,083	6776158,166	52,524
542674,142	6776159,460	52,110
542815,411	6776074,077	54,691
542798,530	6775983,081	52,921
542793,555	6775940,208	53,061
542779,047	6775860,312	53,752
542760,344	6775758,199	54,701
542855,173	6776290,433	55,146
542830,753	6776434,912	52,956
542775,051	6776444,184	52,690
542730,352	6776516,111	54,058
542740,593	6776564,952	55,035
542811,892	6776585,596	55,823
542907,234	6776579,833	56,013
542609,897	6776689,298	54,014
542882,193	6776498,886	54,200
542599,143	6776638,506	53,912
542590,525	6776583,434	52,814
542581,177	6776492,250	51,211
542719,908	6776431,494	52,509
542693,897	6776323,329	52,482
542674,484	6776213,175	52,281
542805,078	6776285,469	55,000
542832,488	6776207,982	55,656
542816,711	6776127,671	55,057
542722,182	6776150,026	53,086
542811,033	6776092,844	54,736
542807,712	6776031,238	53,728
542797,729	6775960,865	52,510
542791,816	6775928,713	53,228
542772,695	6775815,107	54,423
542861,246	6776313,343	54,715
542857,853	6776430,940	53,144
542746,743	6776447,496	52,770
542727,711	6776503,768	53,707
542743,227	6776579,779	55,382
542789,477	6776589,234	55,847
542695,643	6776608,926	55,271
542983,769	6776551,246	56,119
543035,878	6776516,858	55,924
543014,886	6776407,455	54,489
542955,744	6776417,314	53,984
543002,918	6776286,712	54,884

542969,857	6776250,173	55,071
542896,655	6776262,098	55,049
542977,432	6776203,499	55,058
542901,131	6776121,418	55,307
542945,355	6776027,244	55,119
542941,727	6775963,649	54,365
542849,008	6775987,774	53,374
542878,087	6776061,298	54,580
542616,837	6776624,769	54,254
542925,034	6776561,927	55,655
543033,359	6776503,627	55,673
543030,756	6776430,734	54,777
542979,664	6776413,008	54,169
543009,084	6776370,380	54,416
542997,213	6776307,076	54,698
542948,890	6776252,336	55,089
542853,226	6776269,859	55,199
542935,965	6776114,438	55,517
542829,876	6776135,094	55,228
542957,836	6776045,369	55,335
542947,140	6775993,381	54,578
542893,304	6775944,291	53,768
542884,402	6775977,775	53,562
542802,913	6776011,454	53,376
542869,936	6776041,984	54,253
542741,996	6776599,393	55,746
543012,809	6776545,309	56,418
543038,988	6776539,998	56,753
543030,415	6776481,679	55,284
542998,805	6776409,434	54,280
543013,059	6776391,788	54,475
543002,042	6776331,740	54,736
542927,222	6776270,646	54,894
542973,531	6776182,018	55,204
542919,788	6776117,730	55,405
542854,853	6776119,786	55,076
542962,775	6776070,889	55,583
542940,544	6776006,813	54,635
542912,356	6775956,329	53,557
542869,057	6776012,918	54,118
542648,408	6776618,335	54,691
542949,222	6776557,601	55,858
543040,356	6776482,369	55,345
543035,605	6776456,408	54,923
542933,927	6776421,707	53,758
542905,033	6776425,459	53,777
543006,081	6776354,187	54,530
542988,692	6776262,030	54,770
542877,326	6776267,678	55,264
542875,946	6776126,222	55,203
542967,556	6776093,796	55,522
542937,405	6775943,372	54,125
542901,923	6775967,703	53,677
542876,565	6775966,451	52,869
542831,688	6775993,307	53,196
542886,832	6776111,058	55,290
542526,589	6778781,300	54,535
543433,135	6778159,135	54,696
542549,569	6778861,246	52,763
543369,797	6778171,827	55,416
542542,648	6778909,427	52,195
543360,180	6778271,016	55,161
542494,899	6778917,987	52,172
543378,595	6778370,559	55,307
542668,746	6778880,503	53,702
543402,590	6778450,562	55,708
542811,014	6778848,891	53,845
543412,132	6778548,918	55,711
542964,585	6778827,000	52,720
542994,042	6778735,545	55,568
542981,754	6778673,259	57,403
543050,180	6778629,782	56,147
543072,480	6778624,706	56,167
543120,328	6778624,777	56,324
543129,349	6778646,491	55,430
543136,214	6778684,070	53,562
543155,642	6778734,788	52,606
543323,268	6778570,475	56,339
543422,263	6778549,028	55,646
543467,861	6778539,239	55,188
543505,790	6778387,607	53,919
543470,608	6778251,371	54,160
543455,626	6778173,484	54,600
542528,956	6778794,287	54,326

543487,498	6778292,155	53,993
542537,770	6778829,125	53,338
543466,472	6778231,188	54,260
542550,436	6778888,578	52,606
543352,617	6778176,247	55,799
542572,266	6778902,251	52,351
543365,472	6778246,102	55,337
542636,288	6778887,054	53,210
543376,022	6778301,476	55,062
542733,749	6778873,530	53,934
542784,968	6778853,951	53,966
542894,601	6778831,919	53,067
543007,013	6778802,339	53,508
542999,236	6778763,031	54,617
542991,007	6778720,656	56,094
542978,778	6778657,847	57,804
543035,976	6778632,436	56,274
543103,780	6778628,331	56,280
543126,054	6778630,495	56,086
543141,473	6778656,951	54,791
543143,084	6778666,252	54,349
543349,083	6778564,552	56,412
543493,806	6778533,636	54,918
543515,498	6778437,483	53,906
543495,002	6778330,250	54,284
542532,078	6778807,401	53,921
543410,913	6778163,563	54,854
542535,141	6778818,476	53,623
543345,755	6778193,021	55,853
542547,310	6778875,973	52,568
543384,203	6778347,630	55,130
542528,841	6778911,785	52,209
543383,407	6778396,447	55,490
542649,601	6778884,992	53,443
543407,303	6778475,706	55,857
542757,196	6778868,153	54,040
542861,729	6778836,930	53,588
543001,048	6778809,115	53,174
542985,087	6778689,906	56,877
542817,563	6778697,434	61,824
542829,222	6778730,533	60,673
542834,282	6778773,354	57,977
543150,101	6778704,122	53,130
543157,290	6778749,858	52,549
543376,730	6778569,450	56,095
543509,318	6778540,322	54,694
543530,082	6778511,751	54,309
543512,153	6778419,421	53,759
543498,192	6778348,224	54,277
543485,004	6778279,230	54,067
543462,546	6778209,577	54,361
543452,317	6778156,715	54,790
542521,771	6778762,332	54,846
543389,671	6778425,027	55,655
542542,203	6778847,728	52,975
543402,066	6778493,842	55,927
542555,495	6778902,639	52,439
542513,640	6778916,053	52,244
542698,981	6778870,907	54,094
542837,539	6778843,054	53,656
542937,527	6778823,963	52,913
542987,490	6778701,620	56,537
542825,029	6778714,552	61,326
542828,445	6778749,306	59,726
542831,384	6778761,527	58,954
543138,593	6778695,553	53,322
543152,852	6778719,085	52,886
543312,899	6778572,920	56,306
543397,145	6778554,701	55,929
543453,008	6778552,722	55,299
543523,448	6778477,666	54,096
543509,115	6778403,564	53,743
543502,137	6778368,875	54,101
543482,198	6778264,324	54,076
543467,405	6778191,118	54,519
543379,862	6778159,820	55,232
543379,923	6778326,248	55,010
542730,742	6778551,301	59,634
542595,377	6778575,697	59,828
542558,409	6778736,956	56,868
542659,224	6778647,428	63,050
542764,146	6778701,722	62,071
542825,403	6778688,687	61,509
542809,914	6778621,911	62,445

542790,117	6778516,582	60,373
542699,196	6778438,986	58,572
542985,508	6778390,970	57,705
542817,354	6778537,797	60,818
542703,201	6778547,514	59,108
542563,091	6778570,821	59,588
542596,367	6778728,569	58,471
542665,589	6778689,479	61,397
542805,920	6778682,384	61,989
542874,179	6778667,365	60,369
542807,420	6778677,807	62,259
542745,642	6778429,776	58,302
542946,925	6778398,708	58,011
542756,018	6778538,275	60,527
542637,224	6778567,165	59,341
542622,653	6778722,672	59,345
542647,693	6778580,712	61,275
542735,733	6778707,930	61,995
542913,921	6778668,860	59,283
542803,850	6778589,771	62,132
542774,374	6778487,880	59,924
542894,288	6778410,258	58,114
542914,991	6778510,507	59,124
542778,144	6778533,426	60,726
542667,713	6778563,002	59,018
542503,056	6778591,206	58,048
542667,655	6778712,295	60,738
542652,849	6778612,867	62,177
542693,487	6778706,804	61,379
542965,191	6778657,635	58,100
542786,987	6778566,203	61,574
542775,278	6778441,624	58,781
542834,136	6778422,427	58,084
543107,947	6778470,987	57,643
543114,325	6778475,340	57,711
543090,134	6778369,623	57,143
543216,644	6778345,479	55,873
543231,013	6778349,267	56,291
543235,880	6778453,829	57,063
543248,371	6778446,712	56,861
543112,360	6778487,074	57,612
543110,490	6778489,475	57,590
543249,066	6778463,788	56,894
543251,599	6778465,274	56,907
543279,876	6778576,735	56,358
543132,797	6778608,669	56,384
543260,818	6778450,371	56,761
543386,816	6778428,623	55,786
543365,868	6778315,422	55,188
543072,240	6778362,755	57,214
543074,222	6778373,841	57,169
543097,710	6778475,593	58,806
542960,488	6778499,879	58,945
542965,499	6778512,769	58,848