Class 8 Breast Cancer Mini Project

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background

This mini-project explores unsupervised learning techniques applied to the Wisconsin Breast Cancer Diagnostic Data Set, which contains measurements of human breast mass cell nuclei. The project guides the user through exploratory data analysis, performing and interpreting Principal Component Analysis (PCA) to reduce the dimensionality of the data while retaining variance, and applying hierarchical clustering with different linkage methods. It also includes an optional section on K-means clustering for comparison. The ultimate goal is to combine PCA and clustering to better separate benign and malignant cell samples, evaluating the results using metrics like sensitivity and specificity, and finally demonstrating how to predict the classification of new samples using the developed PCA model.

Data import

Our data comes from the U. of Wisconsin Medical Center.

```
read.csv("WisconsinCancer.csv", row.names=1)
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	diagnosis	radius_mean	texture_mean	perimeter_mean	area_mean
842302	M	17.990	10.38	122.80	1001.0
842517	M	20.570	17.77	132.90	1326.0
84300903	M	19.690	21.25	130.00	1203.0
84348301	M	11.420	20.38	77.58	386.1
84358402	M	20.290	14.34	135.10	1297.0
843786	M	12.450	15.70	82.57	477.1
844359	M	18.250	19.98	119.60	1040.0
84458202	M	13.710	20.83	90.20	577.9
844981	M	13.000	21.82	87.50	519.8
84501001	M	12.460	24.04	83.97	475.9
845636	M	16.020	23.24	102.70	797.8
84610002	M	15.780	17.89	103.60	781.0
846226	M	19.170	24.80	132.40	1123.0
846381	M	15.850	23.95	103.70	782.7
84667401	M	13.730	22.61	93.60	578.3
84799002	M	14.540	27.54	96.73	658.8
848406	M	14.680	20.13	94.74	684.5
84862001	M	16.130	20.68	108.10	798.8
849014	M	19.810	22.15	130.00	1260.0
8510426	B	13.540	14.36	87.46	566.3
8510653	B	13.080	15.71	85.63	520.0
8510824	B	9.504	12.44	60.34	273.9
8511133	M	15.340	14.26	102.50	704.4
851509	M	21.160	23.04	137.20	1404.0
852552	M	16.650	21.38	110.00	904.6
852631	M	17.140	16.40	116.00	912.7
852763	M	14.580	21.53	97.41	644.8
852781	M	18.610	20.25	122.10	1094.0
852973	M	15.300	25.27	102.40	732.4
853201	M	17.570	15.05	115.00	955.1
853401	M	18.630	25.11	124.80	1088.0
853612	M	11.840	18.70	77.93	440.6
85382601	M	17.020	23.98	112.80	899.3
854002	M	19.270	26.47	127.90	1162.0
854039	M	16.130	17.88	107.00	807.2
854253	M	16.740	21.59	110.10	869.5
854268	M	14.250	21.72	93.63	633.0
854941	B	13.030	18.42	82.61	523.8
855133	M	14.990	25.20	95.54	698.8

855138	M	13.480	20.82	88.40	559.2
855167	M	13.440	21.58	86.18	563.0
855563	M	10.950	21.35	71.90	371.1
855625	M	19.070	24.81	128.30	1104.0
856106	M	13.280	20.28	87.32	545.2
85638502	M	13.170	21.81	85.42	531.5
857010	M	18.650	17.60	123.70	1076.0
85713702	B	8.196	16.84	51.71	201.9
85715	M	13.170	18.66	85.98	534.6
857155	B	12.050	14.63	78.04	449.3
857156	B	13.490	22.30	86.91	561.0
857343	B	11.760	21.60	74.72	427.9
857373	B	13.640	16.34	87.21	571.8
857374	B	11.940	18.24	75.71	437.6
857392	M	18.220	18.70	120.30	1033.0
857438	M	15.100	22.02	97.26	712.8
85759902	B	11.520	18.75	73.34	409.0
857637	M	19.210	18.57	125.50	1152.0
857793	M	14.710	21.59	95.55	656.9
857810	B	13.050	19.31	82.61	527.2
858477	B	8.618	11.79	54.34	224.5
858970	B	10.170	14.88	64.55	311.9
858981	B	8.598	20.98	54.66	221.8
858986	M	14.250	22.15	96.42	645.7
859196	B	9.173	13.86	59.20	260.9
85922302	M	12.680	23.84	82.69	499.0
859283	M	14.780	23.94	97.40	668.3
859464	B	9.465	21.01	60.11	269.4
859465	B	11.310	19.04	71.80	394.1
859471	B	9.029	17.33	58.79	250.5
859487	B	12.780	16.49	81.37	502.5
859575	M	18.940	21.31	123.60	1130.0
859711	B	8.888	14.64	58.79	244.0
859717	M	17.200	24.52	114.20	929.4
859983	M	13.800	15.79	90.43	584.1
8610175	B	12.310	16.52	79.19	470.9
8610404	M	16.070	19.65	104.10	817.7
8610629	B	13.530	10.94	87.91	559.2
8610637	M	18.050	16.15	120.20	1006.0
8610862	M	20.180	23.97	143.70	1245.0
8610908	B	12.860	18.00	83.19	506.3
861103	B	11.450	20.97	73.81	401.5
8611161	B	13.340	15.86	86.49	520.0

8611555	M	25.220	24.91	171.50	1878.0
8611792	M	19.100	26.29	129.10	1132.0
8612080	B	12.000	15.65	76.95	443.3
8612399	M	18.460	18.52	121.10	1075.0
86135501	M	14.480	21.46	94.25	648.2
86135502	M	19.020	24.59	122.00	1076.0
861597	B	12.360	21.80	79.78	466.1
861598	B	14.640	15.24	95.77	651.9
861648	B	14.620	24.02	94.57	662.7
861799	M	15.370	22.76	100.20	728.2
861853	B	13.270	14.76	84.74	551.7
862009	B	13.450	18.30	86.60	555.1
862028	M	15.060	19.83	100.30	705.6
86208	M	20.260	23.03	132.40	1264.0
86211	B	12.180	17.84	77.79	451.1
862261	B	9.787	19.94	62.11	294.5
862485	B	11.600	12.84	74.34	412.6
862548	M	14.420	19.77	94.48	642.5
862717	M	13.610	24.98	88.05	582.7
862722	B	6.981	13.43	43.79	143.5
862965	B	12.180	20.52	77.22	458.7
862980	B	9.876	19.40	63.95	298.3
862989	B	10.490	19.29	67.41	336.1
863030	M	13.110	15.56	87.21	530.2
863031	B	11.640	18.33	75.17	412.5
863270	B	12.360	18.54	79.01	466.7
86355	M	22.270	19.67	152.80	1509.0
864018	B	11.340	21.26	72.48	396.5
864033	B	9.777	16.99	62.50	290.2
86408	B	12.630	20.76	82.15	480.4
86409	B	14.260	19.65	97.83	629.9
864292	B	10.510	20.19	68.64	334.2
864496	B	8.726	15.83	55.84	230.9
864685	B	11.930	21.53	76.53	438.6
864726	B	8.950	15.76	58.74	245.2
864729	M	14.870	16.67	98.64	682.5
864877	M	15.780	22.91	105.70	782.6
865128	M	17.950	20.01	114.20	982.0
865137	B	11.410	10.82	73.34	403.3
86517	M	18.660	17.12	121.40	1077.0
865423	M	24.250	20.20	166.20	1761.0
865432	B	14.500	10.89	94.28	640.7
865468	B	13.370	16.39	86.10	553.5

86561	B	13.850	17.21	88.44	588.7
866083	M	13.610	24.69	87.76	572.6
866203	M	19.000	18.91	123.40	1138.0
866458	B	15.100	16.39	99.58	674.5
866674	M	19.790	25.12	130.40	1192.0
866714	B	12.190	13.29	79.08	455.8
8670	M	15.460	19.48	101.70	748.9
86730502	M	16.160	21.54	106.20	809.8
867387	B	15.710	13.93	102.00	761.7
867739	M	18.450	21.91	120.20	1075.0
868202	M	12.770	22.47	81.72	506.3
868223	B	11.710	16.67	74.72	423.6
868682	B	11.430	15.39	73.06	399.8
868826	M	14.950	17.57	96.85	678.1
868871	B	11.280	13.39	73.00	384.8
868999	B	9.738	11.97	61.24	288.5
869104	M	16.110	18.05	105.10	813.0
869218	B	11.430	17.31	73.66	398.0
869224	B	12.900	15.92	83.74	512.2
869254	B	10.750	14.97	68.26	355.3
869476	B	11.900	14.65	78.11	432.8
869691	M	11.800	16.58	78.99	432.0
86973701	B	14.950	18.77	97.84	689.5
86973702	B	14.440	15.18	93.97	640.1
869931	B	13.740	17.91	88.12	585.0
871001501	B	13.000	20.78	83.51	519.4
871001502	B	8.219	20.70	53.27	203.9
8710441	B	9.731	15.34	63.78	300.2
87106	B	11.150	13.08	70.87	381.9
8711002	B	13.150	15.34	85.31	538.9
8711003	B	12.250	17.94	78.27	460.3
8711202	M	17.680	20.74	117.40	963.7
8711216	B	16.840	19.46	108.40	880.2
871122	B	12.060	12.74	76.84	448.6
871149	B	10.900	12.96	68.69	366.8
8711561	B	11.750	20.18	76.10	419.8
8711803	M	19.190	15.94	126.30	1157.0
871201	M	19.590	18.15	130.70	1214.0
8712064	B	12.340	22.22	79.85	464.5
8712289	M	23.270	22.04	152.10	1686.0
8712291	B	14.970	19.76	95.50	690.2
87127	B	10.800	9.71	68.77	357.6
8712729	M	16.780	18.80	109.30	886.3

8712766	M	17.470	24.68	116.10	984.6
8712853	B	14.970	16.95	96.22	685.9
87139402	B	12.320	12.39	78.85	464.1
87163	M	13.430	19.63	85.84	565.4
87164	M	15.460	11.89	102.50	736.9
871641	B	11.080	14.71	70.21	372.7
871642	B	10.660	15.15	67.49	349.6
872113	B	8.671	14.45	54.42	227.2
872608	B	9.904	18.06	64.60	302.4
87281702	M	16.460	20.11	109.30	832.9
873357	B	13.010	22.22	82.01	526.4
873586	B	12.810	13.06	81.29	508.8
873592	M	27.220	21.87	182.10	2250.0
873593	M	21.090	26.57	142.70	1311.0
873701	M	15.700	20.31	101.20	766.6
873843	B	11.410	14.92	73.53	402.0
873885	M	15.280	22.41	98.92	710.6
874158	B	10.080	15.11	63.76	317.5
874217	M	18.310	18.58	118.60	1041.0
874373	B	11.710	17.19	74.68	420.3
874662	B	11.810	17.39	75.27	428.9
874839	B	12.300	15.90	78.83	463.7
874858	M	14.220	23.12	94.37	609.9
875093	B	12.770	21.41	82.02	507.4
875099	B	9.720	18.22	60.73	288.1
875263	M	12.340	26.86	81.15	477.4
87556202	M	14.860	23.21	100.40	671.4
875878	B	12.910	16.33	82.53	516.4
875938	M	13.770	22.29	90.63	588.9
877159	M	18.080	21.84	117.40	1024.0
877486	M	19.180	22.49	127.50	1148.0
877500	M	14.450	20.22	94.49	642.7
877501	B	12.230	19.56	78.54	461.0
877989	M	17.540	19.32	115.10	951.6
878796	M	23.290	26.67	158.90	1685.0
87880	M	13.810	23.75	91.56	597.8
87930	B	12.470	18.60	81.09	481.9
879523	M	15.120	16.68	98.78	716.6
879804	B	9.876	17.27	62.92	295.4
879830	M	17.010	20.26	109.70	904.3
8810158	B	13.110	22.54	87.02	529.4
8810436	B	15.270	12.91	98.17	725.5
881046502	M	20.580	22.14	134.70	1290.0

8810528	B	11.840	18.94	75.51	428.0
8810703	M	28.110	18.47	188.50	2499.0
881094802	M	17.420	25.56	114.50	948.0
8810955	M	14.190	23.81	92.87	610.7
8810987	M	13.860	16.93	90.96	578.9
8811523	B	11.890	18.35	77.32	432.2
8811779	B	10.200	17.48	65.05	321.2
8811842	M	19.800	21.56	129.70	1230.0
88119002	M	19.530	32.47	128.00	1223.0
8812816	B	13.650	13.16	87.88	568.9
8812818	B	13.560	13.90	88.59	561.3
8812844	B	10.180	17.53	65.12	313.1
8812877	M	15.750	20.25	102.60	761.3
8813129	B	13.270	17.02	84.55	546.4
88143502	B	14.340	13.47	92.51	641.2
88147101	B	10.440	15.46	66.62	329.6
88147102	B	15.000	15.51	97.45	684.5
88147202	B	12.620	23.97	81.35	496.4
881861	M	12.830	22.33	85.26	503.2
881972	M	17.050	19.08	113.40	895.0
88199202	B	11.320	27.08	71.76	395.7
88203002	B	11.220	33.81	70.79	386.8
88206102	M	20.510	27.81	134.40	1319.0
882488	B	9.567	15.91	60.21	279.6
88249602	B	14.030	21.25	89.79	603.4
88299702	M	23.210	26.97	153.50	1670.0
883263	M	20.480	21.46	132.50	1306.0
883270	B	14.220	27.85	92.55	623.9
88330202	M	17.460	39.28	113.40	920.6
88350402	B	13.640	15.60	87.38	575.3
883539	B	12.420	15.04	78.61	476.5
883852	B	11.300	18.19	73.93	389.4
88411702	B	13.750	23.77	88.54	590.0
884180	M	19.400	23.50	129.10	1155.0
884437	B	10.480	19.86	66.72	337.7
884448	B	13.200	17.43	84.13	541.6
884626	B	12.890	14.11	84.95	512.2
88466802	B	10.650	25.22	68.01	347.0
884689	B	11.520	14.93	73.87	406.3
884948	M	20.940	23.56	138.90	1364.0
88518501	B	11.500	18.45	73.28	407.4
885429	M	19.730	19.82	130.70	1206.0
8860702	M	17.300	17.08	113.00	928.2

886226	M	19.450	19.33	126.50	1169.0
886452	M	13.960	17.05	91.43	602.4
88649001	M	19.550	28.77	133.60	1207.0
886776	M	15.320	17.27	103.20	713.3
887181	M	15.660	23.20	110.20	773.5
88725602	M	15.530	33.56	103.70	744.9
887549	M	20.310	27.06	132.90	1288.0
888264	M	17.350	23.06	111.00	933.1
888570	M	17.290	22.13	114.40	947.8
889403	M	15.610	19.38	100.00	758.6
889719	M	17.190	22.07	111.60	928.3
88995002	M	20.730	31.12	135.70	1419.0
8910251	B	10.600	18.95	69.28	346.4
8910499	B	13.590	21.84	87.16	561.0
8910506	B	12.870	16.21	82.38	512.2
8910720	B	10.710	20.39	69.50	344.9
8910721	B	14.290	16.82	90.30	632.6
8910748	B	11.290	13.04	72.23	388.0
8910988	M	21.750	20.99	147.30	1491.0
8910996	B	9.742	15.67	61.50	289.9
8911163	M	17.930	24.48	115.20	998.9
8911164	B	11.890	17.36	76.20	435.6
8911230	B	11.330	14.16	71.79	396.6
8911670	M	18.810	19.98	120.90	1102.0
8911800	B	13.590	17.84	86.24	572.3
8911834	B	13.850	15.18	88.99	587.4
8912049	M	19.160	26.60	126.20	1138.0
8912055	B	11.740	14.02	74.24	427.3
89122	M	19.400	18.18	127.20	1145.0
8912280	M	16.240	18.77	108.80	805.1
8912284	B	12.890	15.70	84.08	516.6
8912521	B	12.580	18.40	79.83	489.0
8912909	B	11.940	20.76	77.87	441.0
8913	B	12.890	13.12	81.89	515.9
8913049	B	11.260	19.96	73.72	394.1
89143601	B	11.370	18.89	72.17	396.0
89143602	B	14.410	19.73	96.03	651.0
8915	B	14.960	19.10	97.03	687.3
891670	B	12.950	16.02	83.14	513.7
891703	B	11.850	17.46	75.54	432.7
891716	B	12.720	13.78	81.78	492.1
891923	B	13.770	13.27	88.06	582.7
891936	B	10.910	12.35	69.14	363.7

892189	M	11.760	18.14	75.00	431.1
892214	B	14.260	18.17	91.22	633.1
892399	B	10.510	23.09	66.85	334.2
892438	M	19.530	18.90	129.50	1217.0
892604	B	12.460	19.89	80.43	471.3
89263202	M	20.090	23.86	134.70	1247.0
892657	B	10.490	18.61	66.86	334.3
89296	B	11.460	18.16	73.59	403.1
893061	B	11.600	24.49	74.23	417.2
89344	B	13.200	15.82	84.07	537.3
89346	B	9.000	14.40	56.36	246.3
893526	B	13.500	12.71	85.69	566.2
893548	B	13.050	13.84	82.71	530.6
893783	B	11.700	19.11	74.33	418.7
89382601	B	14.610	15.69	92.68	664.9
89382602	B	12.760	13.37	82.29	504.1
893988	B	11.540	10.72	73.73	409.1
894047	B	8.597	18.60	54.09	221.2
894089	B	12.490	16.85	79.19	481.6
894090	B	12.180	14.08	77.25	461.4
894326	M	18.220	18.87	118.70	1027.0
894329	B	9.042	18.90	60.07	244.5
894335	B	12.430	17.00	78.60	477.3
894604	B	10.250	16.18	66.52	324.2
894618	M	20.160	19.66	131.10	1274.0
894855	B	12.860	13.32	82.82	504.8
895100	M	20.340	21.51	135.90	1264.0
89511501	B	12.200	15.21	78.01	457.9
89511502	B	12.670	17.30	81.25	489.9
89524	B	14.110	12.88	90.03	616.5
895299	B	12.030	17.93	76.09	446.0
8953902	M	16.270	20.71	106.90	813.7
895633	M	16.260	21.88	107.50	826.8
896839	M	16.030	15.51	105.80	793.2
896864	B	12.980	19.35	84.52	514.0
897132	B	11.220	19.86	71.94	387.3
897137	B	11.250	14.78	71.38	390.0
897374	B	12.300	19.02	77.88	464.4
89742801	M	17.060	21.00	111.80	918.6
897604	B	12.990	14.23	84.08	514.3
897630	M	18.770	21.43	122.90	1092.0
897880	B	10.050	17.53	64.41	310.8
89812	M	23.510	24.27	155.10	1747.0

89813	B	14.420	16.54	94.15	641.2
898143	B	9.606	16.84	61.64	280.5
89827	B	11.060	14.96	71.49	373.9
898431	M	19.680	21.68	129.90	1194.0
89864002	B	11.710	15.45	75.03	420.3
898677	B	10.260	14.71	66.20	321.6
898678	B	12.060	18.90	76.66	445.3
89869	B	14.760	14.74	94.87	668.7
898690	B	11.470	16.03	73.02	402.7
899147	B	11.950	14.96	77.23	426.7
899187	B	11.660	17.07	73.70	421.0
899667	M	15.750	19.22	107.10	758.6
899987	M	25.730	17.46	174.20	2010.0
9010018	M	15.080	25.74	98.00	716.6
901011	B	11.140	14.07	71.24	384.6
9010258	B	12.560	19.07	81.92	485.8
9010259	B	13.050	18.59	85.09	512.0
901028	B	13.870	16.21	88.52	593.7
9010333	B	8.878	15.49	56.74	241.0
901034301	B	9.436	18.32	59.82	278.6
901034302	B	12.540	18.07	79.42	491.9
901041	B	13.300	21.57	85.24	546.1
9010598	B	12.760	18.84	81.87	496.6
9010872	B	16.500	18.29	106.60	838.1
9010877	B	13.400	16.95	85.48	552.4
901088	M	20.440	21.78	133.80	1293.0
9011494	M	20.200	26.83	133.70	1234.0
9011495	B	12.210	18.02	78.31	458.4
9011971	M	21.710	17.25	140.90	1546.0
9012000	M	22.010	21.90	147.20	1482.0
9012315	M	16.350	23.29	109.00	840.4
9012568	B	15.190	13.21	97.65	711.8
9012795	M	21.370	15.10	141.30	1386.0
901288	M	20.640	17.35	134.80	1335.0
9013005	B	13.690	16.07	87.84	579.1
901303	B	16.170	16.07	106.30	788.5
901315	B	10.570	20.22	70.15	338.3
9013579	B	13.460	28.21	85.89	562.1
9013594	B	13.660	15.15	88.27	580.6
9013838	M	11.080	18.83	73.30	361.6
901549	B	11.270	12.96	73.16	386.3
901836	B	11.040	14.93	70.67	372.7
90250	B	12.050	22.72	78.75	447.8

90251	B	12.390	17.48	80.64	462.9
902727	B	13.280	13.72	85.79	541.8
90291	M	14.600	23.29	93.97	664.7
902975	B	12.210	14.09	78.78	462.0
902976	B	13.880	16.16	88.37	596.6
903011	B	11.270	15.50	73.38	392.0
90312	M	19.550	23.21	128.90	1174.0
90317302	B	10.260	12.22	65.75	321.6
903483	B	8.734	16.84	55.27	234.3
903507	M	15.490	19.97	102.40	744.7
903516	M	21.610	22.28	144.40	1407.0
903554	B	12.100	17.72	78.07	446.2
903811	B	14.060	17.18	89.75	609.1
90401601	B	13.510	18.89	88.10	558.1
90401602	B	12.800	17.46	83.05	508.3
904302	B	11.060	14.83	70.31	378.2
904357	B	11.800	17.26	75.26	431.9
90439701	M	17.910	21.02	124.40	994.0
904647	B	11.930	10.91	76.14	442.7
904689	B	12.960	18.29	84.18	525.2
9047	B	12.940	16.17	83.18	507.6
904969	B	12.340	14.95	78.29	469.1
904971	B	10.940	18.59	70.39	370.0
905189	B	16.140	14.86	104.30	800.0
905190	B	12.850	21.37	82.63	514.5
90524101	M	17.990	20.66	117.80	991.7
905501	B	12.270	17.92	78.41	466.1
905502	B	11.360	17.57	72.49	399.8
905520	B	11.040	16.83	70.92	373.2
905539	B	9.397	21.68	59.75	268.8
905557	B	14.990	22.11	97.53	693.7
905680	M	15.130	29.81	96.71	719.5
905686	B	11.890	21.17	76.39	433.8
905978	B	9.405	21.70	59.60	271.2
90602302	M	15.500	21.08	102.90	803.1
906024	B	12.700	12.17	80.88	495.0
906290	B	11.160	21.41	70.95	380.3
906539	B	11.570	19.04	74.20	409.7
906564	B	14.690	13.98	98.22	656.1
906616	B	11.610	16.02	75.46	408.2
906878	B	13.660	19.13	89.46	575.3
907145	B	9.742	19.12	61.93	289.7
907367	B	10.030	21.28	63.19	307.3

907409	B	10.480	14.98	67.49	333.6
90745	B	10.800	21.98	68.79	359.9
90769601	B	11.130	16.62	70.47	381.1
90769602	B	12.720	17.67	80.98	501.3
907914	M	14.900	22.53	102.10	685.0
907915	B	12.400	17.68	81.47	467.8
908194	M	20.180	19.54	133.80	1250.0
908445	M	18.820	21.97	123.70	1110.0
908469	B	14.860	16.94	94.89	673.7
908489	M	13.980	19.62	91.12	599.5
908916	B	12.870	19.54	82.67	509.2
909220	B	14.040	15.98	89.78	611.2
909231	B	13.850	19.60	88.68	592.6
909410	B	14.020	15.66	89.59	606.5
909411	B	10.970	17.20	71.73	371.5
909445	M	17.270	25.42	112.40	928.8
90944601	B	13.780	15.79	88.37	585.9
909777	B	10.570	18.32	66.82	340.9
9110127	M	18.030	16.85	117.50	990.0
9110720	B	11.990	24.89	77.61	441.3
9110732	M	17.750	28.03	117.30	981.6
9110944	B	14.800	17.66	95.88	674.8
911150	B	14.530	19.34	94.25	659.7
911157302	M	21.100	20.52	138.10	1384.0
9111596	B	11.870	21.54	76.83	432.0
9111805	M	19.590	25.00	127.70	1191.0
9111843	B	12.000	28.23	76.77	442.5
911201	B	14.530	13.98	93.86	644.2
911202	B	12.620	17.15	80.62	492.9
9112085	B	13.380	30.72	86.34	557.2
9112366	B	11.630	29.29	74.87	415.1
9112367	B	13.210	25.25	84.10	537.9
9112594	B	13.000	25.13	82.61	520.2
9112712	B	9.755	28.20	61.68	290.9
911296201	M	17.080	27.15	111.20	930.9
911296202	M	27.420	26.27	186.90	2501.0
9113156	B	14.400	26.99	92.25	646.1
911320501	B	11.600	18.36	73.88	412.7
911320502	B	13.170	18.22	84.28	537.3
9113239	B	13.240	20.13	86.87	542.9
9113455	B	13.140	20.74	85.98	536.9
9113514	B	9.668	18.10	61.06	286.3
9113538	M	17.600	23.33	119.00	980.5

911366	B	11.620	18.18	76.38	408.8
9113778	B	9.667	18.49	61.49	289.1
9113816	B	12.040	28.14	76.85	449.9
911384	B	14.920	14.93	96.45	686.9
9113846	B	12.270	29.97	77.42	465.4
911391	B	10.880	15.62	70.41	358.9
911408	B	12.830	15.73	82.89	506.9
911654	B	14.200	20.53	92.41	618.4
911673	B	13.900	16.62	88.97	599.4
911685	B	11.490	14.59	73.99	404.9
911916	M	16.250	19.51	109.80	815.8
912193	B	12.160	18.03	78.29	455.3
91227	B	13.900	19.24	88.73	602.9
912519	B	13.470	14.06	87.32	546.3
912558	B	13.700	17.64	87.76	571.1
912600	B	15.730	11.28	102.80	747.2
913063	B	12.450	16.41	82.85	476.7
913102	B	14.640	16.85	94.21	666.0
913505	M	19.440	18.82	128.10	1167.0
913512	B	11.680	16.17	75.49	420.5
913535	M	16.690	20.20	107.10	857.6
91376701	B	12.250	22.44	78.18	466.5
91376702	B	17.850	13.23	114.60	992.1
914062	M	18.010	20.56	118.40	1007.0
914101	B	12.460	12.83	78.83	477.3
914102	B	13.160	20.54	84.06	538.7
914333	B	14.870	20.21	96.12	680.9
914366	B	12.650	18.17	82.69	485.6
914580	B	12.470	17.31	80.45	480.1
914769	M	18.490	17.52	121.30	1068.0
91485	M	20.590	21.24	137.80	1320.0
914862	B	15.040	16.74	98.73	689.4
91504	M	13.820	24.49	92.33	595.9
91505	B	12.540	16.32	81.25	476.3
915143	M	23.090	19.83	152.10	1682.0
915186	B	9.268	12.87	61.49	248.7
915276	B	9.676	13.14	64.12	272.5
91544001	B	12.220	20.04	79.47	453.1
91544002	B	11.060	17.12	71.25	366.5
915452	B	16.300	15.70	104.70	819.8
915460	M	15.460	23.95	103.80	731.3
91550	B	11.740	14.69	76.31	426.0
915664	B	14.810	14.70	94.66	680.7

915691	M	13.400	20.52	88.64	556.7
915940	B	14.580	13.66	94.29	658.8
91594602	M	15.050	19.07	97.26	701.9
916221	B	11.340	18.61	72.76	391.2
916799	M	18.310	20.58	120.80	1052.0
916838	M	19.890	20.26	130.50	1214.0
917062	B	12.880	18.22	84.45	493.1
917080	B	12.750	16.70	82.51	493.8
917092	B	9.295	13.90	59.96	257.8
91762702	M	24.630	21.60	165.50	1841.0
91789	B	11.260	19.83	71.30	388.1
917896	B	13.710	18.68	88.73	571.0
917897	B	9.847	15.68	63.00	293.2
91805	B	8.571	13.10	54.53	221.3
91813701	B	13.460	18.75	87.44	551.1
91813702	B	12.340	12.27	78.94	468.5
918192	B	13.940	13.17	90.31	594.2
918465	B	12.070	13.44	77.83	445.2
91858	B	11.750	17.56	75.89	422.9
91903901	B	11.670	20.02	75.21	416.2
91903902	B	13.680	16.33	87.76	575.5
91930402	M	20.470	20.67	134.70	1299.0
919537	B	10.960	17.62	70.79	365.6
919555	M	20.550	20.86	137.80	1308.0
91979701	M	14.270	22.55	93.77	629.8
919812	B	11.690	24.44	76.37	406.4
921092	B	7.729	25.49	47.98	178.8
921362	B	7.691	25.44	48.34	170.4
921385	B	11.540	14.44	74.65	402.9
921386	B	14.470	24.99	95.81	656.4
921644	B	14.740	25.42	94.70	668.6
922296	B	13.210	28.06	84.88	538.4
922297	B	13.870	20.70	89.77	584.8
922576	B	13.620	23.23	87.19	573.2
922577	B	10.320	16.35	65.31	324.9
922840	B	10.260	16.58	65.85	320.8
923169	B	9.683	19.34	61.05	285.7
923465	B	10.820	24.21	68.89	361.6
923748	B	10.860	21.48	68.51	360.5
923780	B	11.130	22.44	71.49	378.4
924084	B	12.770	29.43	81.35	507.9
924342	B	9.333	21.94	59.01	264.0
924632	B	12.880	28.92	82.50	514.3

924934	B	10.290	27.61	65.67	321.4
924964	B	10.160	19.59	64.73	311.7
925236	B	9.423	27.88	59.26	271.3
925277	B	14.590	22.68	96.39	657.1
925291	B	11.510	23.93	74.52	403.5
925292	B	14.050	27.15	91.38	600.4
925311	B	11.200	29.37	70.67	386.0
925622	M	15.220	30.62	103.40	716.9
926125	M	20.920	25.09	143.00	1347.0
926424	M	21.560	22.39	142.00	1479.0
926682	M	20.130	28.25	131.20	1261.0
926954	M	16.600	28.08	108.30	858.1
927241	M	20.600	29.33	140.10	1265.0
92751	B	7.760	24.54	47.92	181.0

	smoothness_mean	compactness_mean	concavity_mean	concave.points_mean
842302	0.11840	0.27760	0.3001000	0.147100
842517	0.08474	0.07864	0.0869000	0.070170
84300903	0.10960	0.15990	0.1974000	0.127900
84348301	0.14250	0.28390	0.2414000	0.105200
84358402	0.10030	0.13280	0.1980000	0.104300
843786	0.12780	0.17000	0.1578000	0.080890
844359	0.09463	0.10900	0.1127000	0.074000
84458202	0.11890	0.16450	0.0936600	0.059850
844981	0.12730	0.19320	0.1859000	0.093530
84501001	0.11860	0.23960	0.2273000	0.085430
845636	0.08206	0.06669	0.0329900	0.033230
84610002	0.09710	0.12920	0.0995400	0.066060
846226	0.09740	0.24580	0.2065000	0.111800
846381	0.08401	0.10020	0.0993800	0.053640
84667401	0.11310	0.22930	0.2128000	0.080250
84799002	0.11390	0.15950	0.1639000	0.073640
848406	0.09867	0.07200	0.0739500	0.052590
84862001	0.11700	0.20220	0.1722000	0.102800
849014	0.09831	0.10270	0.1479000	0.094980
8510426	0.09779	0.08129	0.0666400	0.047810
8510653	0.10750	0.12700	0.0456800	0.031100
8510824	0.10240	0.06492	0.0295600	0.020760
8511133	0.10730	0.21350	0.2077000	0.097560
851509	0.09428	0.10220	0.1097000	0.086320
852552	0.11210	0.14570	0.1525000	0.091700
852631	0.11860	0.22760	0.2229000	0.140100
852763	0.10540	0.18680	0.1425000	0.087830
852781	0.09440	0.10660	0.1490000	0.077310

852973	0.10820	0.16970	0.1683000	0.087510
853201	0.09847	0.11570	0.0987500	0.079530
853401	0.10640	0.18870	0.2319000	0.124400
853612	0.11090	0.15160	0.1218000	0.051820
85382601	0.11970	0.14960	0.2417000	0.120300
854002	0.09401	0.17190	0.1657000	0.075930
854039	0.10400	0.15590	0.1354000	0.077520
854253	0.09610	0.13360	0.1348000	0.060180
854268	0.09823	0.10980	0.1319000	0.055980
854941	0.08983	0.03766	0.0256200	0.029230
855133	0.09387	0.05131	0.0239800	0.028990
855138	0.10160	0.12550	0.1063000	0.054390
855167	0.08162	0.06031	0.0311000	0.020310
855563	0.12270	0.12180	0.1044000	0.056690
855625	0.09081	0.21900	0.2107000	0.099610
856106	0.10410	0.14360	0.0984700	0.061580
85638502	0.09714	0.10470	0.0825900	0.052520
857010	0.10990	0.16860	0.1974000	0.100900
85713702	0.08600	0.05943	0.0158800	0.005917
85715	0.11580	0.12310	0.1226000	0.073400
857155	0.10310	0.09092	0.0659200	0.027490
857156	0.08752	0.07698	0.0475100	0.033840
857343	0.08637	0.04966	0.0165700	0.011150
857373	0.07685	0.06059	0.0185700	0.017230
857374	0.08261	0.04751	0.0197200	0.013490
857392	0.11480	0.14850	0.1772000	0.106000
857438	0.09056	0.07081	0.0525300	0.033340
85759902	0.09524	0.05473	0.0303600	0.022780
857637	0.10530	0.12670	0.1323000	0.089940
857793	0.11370	0.13650	0.1293000	0.081230
857810	0.08060	0.03789	0.0006920	0.004167
858477	0.09752	0.05272	0.0206100	0.007799
858970	0.11340	0.08061	0.0108400	0.012900
858981	0.12430	0.08963	0.0300000	0.009259
858986	0.10490	0.20080	0.2135000	0.086530
859196	0.07721	0.08751	0.0598800	0.021800
85922302	0.11220	0.12620	0.1128000	0.068730
859283	0.11720	0.14790	0.1267000	0.090290
859464	0.10440	0.07773	0.0217200	0.015040
859465	0.08139	0.04701	0.0370900	0.022300
859471	0.10660	0.14130	0.3130000	0.043750
859487	0.09831	0.05234	0.0365300	0.028640
859575	0.09009	0.10290	0.1080000	0.079510

859711	0.09783	0.15310	0.0860600	0.028720
859717	0.10710	0.18300	0.1692000	0.079440
859983	0.10070	0.12800	0.0778900	0.050690
8610175	0.09172	0.06829	0.0337200	0.022720
8610404	0.09168	0.08424	0.0976900	0.066380
8610629	0.12910	0.10470	0.0687700	0.065560
8610637	0.10650	0.21460	0.1684000	0.108000
8610862	0.12860	0.34540	0.3754000	0.160400
8610908	0.09934	0.09546	0.0388900	0.023150
861103	0.11020	0.09362	0.0459100	0.022330
8611161	0.10780	0.15350	0.1169000	0.069870
8611555	0.10630	0.26650	0.3339000	0.184500
8611792	0.12150	0.17910	0.1937000	0.146900
8612080	0.09723	0.07165	0.0415100	0.018630
8612399	0.09874	0.10530	0.1335000	0.087950
86135501	0.09444	0.09947	0.1204000	0.049380
86135502	0.09029	0.12060	0.1468000	0.082710
861597	0.08772	0.09445	0.0601500	0.037450
861598	0.11320	0.13390	0.0996600	0.070640
861648	0.08974	0.08606	0.0310200	0.029570
861799	0.09200	0.10360	0.1122000	0.074830
861853	0.07355	0.05055	0.0326100	0.026480
862009	0.10220	0.08165	0.0397400	0.027800
862028	0.10390	0.15530	0.1700000	0.088150
86208	0.09078	0.13130	0.1465000	0.086830
86211	0.10450	0.07057	0.0249000	0.029410
862261	0.10240	0.05301	0.0068290	0.007937
862485	0.08983	0.07525	0.0419600	0.033500
862548	0.09752	0.11410	0.0938800	0.058390
862717	0.09488	0.08511	0.0862500	0.044890
862722	0.11700	0.07568	0.0000000	0.000000
862965	0.08013	0.04038	0.0238300	0.017700
862980	0.10050	0.09697	0.0615400	0.030290
862989	0.09989	0.08578	0.0299500	0.012010
863030	0.13980	0.17650	0.2071000	0.096010
863031	0.11420	0.10170	0.0707000	0.034850
863270	0.08477	0.06815	0.0264300	0.019210
86355	0.13260	0.27680	0.4264000	0.182300
864018	0.08759	0.06575	0.0513300	0.018990
864033	0.10370	0.08404	0.0433400	0.017780
86408	0.09933	0.12090	0.1065000	0.060210
86409	0.07837	0.22330	0.3003000	0.077980
864292	0.11220	0.13030	0.0647600	0.030680

864496	0.11500	0.08201	0.0413200	0.019240
864685	0.09768	0.07849	0.0332800	0.020080
864726	0.09462	0.12430	0.0926300	0.023080
864729	0.11620	0.16490	0.1690000	0.089230
864877	0.11550	0.17520	0.2133000	0.094790
865128	0.08402	0.06722	0.0729300	0.055960
865137	0.09373	0.06685	0.0351200	0.026230
86517	0.10540	0.11000	0.1457000	0.086650
865423	0.14470	0.28670	0.4268000	0.201200
865432	0.11010	0.10990	0.0884200	0.057780
865468	0.07115	0.07325	0.0809200	0.028000
86561	0.08785	0.06136	0.0142000	0.011410
866083	0.09258	0.07862	0.0528500	0.030850
866203	0.08217	0.08028	0.0927100	0.056270
866458	0.11500	0.18070	0.1138000	0.085340
866674	0.10150	0.15890	0.2545000	0.114900
866714	0.10660	0.09509	0.0285500	0.028820
8670	0.10920	0.12230	0.1466000	0.080870
86730502	0.10080	0.12840	0.1043000	0.056130
867387	0.09462	0.09462	0.0713500	0.059330
867739	0.09430	0.09709	0.1153000	0.068470
868202	0.09055	0.05761	0.0471100	0.027040
868223	0.10510	0.06095	0.0359200	0.026000
868682	0.09639	0.06889	0.0350300	0.028750
868826	0.11670	0.13050	0.1539000	0.086240
868871	0.11640	0.11360	0.0463500	0.047960
868999	0.09250	0.04102	0.0000000	0.000000
869104	0.09721	0.11370	0.0944700	0.059430
869218	0.10920	0.09486	0.0203100	0.018610
869224	0.08677	0.09509	0.0489400	0.030880
869254	0.07793	0.05139	0.0225100	0.007875
869476	0.11520	0.12960	0.0371000	0.030030
869691	0.10910	0.17000	0.1659000	0.074150
86973701	0.08138	0.11670	0.0905000	0.035620
86973702	0.09970	0.10210	0.0848700	0.055320
869931	0.07944	0.06376	0.0288100	0.013290
871001501	0.11350	0.07589	0.0313600	0.026450
871001502	0.09405	0.13050	0.1321000	0.021680
8710441	0.10720	0.15990	0.4108000	0.078570
87106	0.09754	0.05113	0.0198200	0.017860
8711002	0.09384	0.08498	0.0929300	0.034830
8711003	0.08654	0.06679	0.0388500	0.023310
8711202	0.11150	0.16650	0.1855000	0.105400

8711216	0.07445	0.07223	0.0515000	0.027710
871122	0.09311	0.05241	0.0197200	0.019630
871149	0.07515	0.03718	0.0030900	0.006588
8711561	0.10890	0.11410	0.0684300	0.037380
8711803	0.08694	0.11850	0.1193000	0.096670
871201	0.11200	0.16660	0.2508000	0.128600
8712064	0.10120	0.10150	0.0537000	0.028220
8712289	0.08439	0.11450	0.1324000	0.097020
8712291	0.08421	0.05352	0.0194700	0.019390
87127	0.09594	0.05736	0.0253100	0.016980
8712729	0.08865	0.09182	0.0842200	0.065760
8712766	0.10490	0.16030	0.2159000	0.104300
8712853	0.09855	0.07885	0.0260200	0.037810
87139402	0.10280	0.06981	0.0398700	0.037000
87163	0.09048	0.06288	0.0585800	0.034380
87164	0.12570	0.15550	0.2032000	0.109700
871641	0.10060	0.05743	0.0236300	0.025830
871642	0.08792	0.04302	0.0000000	0.000000
872113	0.09138	0.04276	0.0000000	0.000000
872608	0.09699	0.12940	0.1307000	0.037160
87281702	0.09831	0.15560	0.1793000	0.088660
873357	0.06251	0.01938	0.0015950	0.001852
873586	0.08739	0.03774	0.0091930	0.013300
873592	0.10940	0.19140	0.2871000	0.187800
873593	0.11410	0.28320	0.2487000	0.149600
873701	0.09597	0.08799	0.0659300	0.051890
873843	0.09059	0.08155	0.0618100	0.023610
873885	0.09057	0.10520	0.0537500	0.032630
874158	0.09267	0.04695	0.0015970	0.002404
874217	0.08588	0.08468	0.0816900	0.058140
874373	0.09774	0.06141	0.0380900	0.032390
874662	0.10070	0.05562	0.0235300	0.015530
874839	0.08080	0.07253	0.0384400	0.016540
874858	0.10750	0.24130	0.1981000	0.066180
875093	0.08749	0.06601	0.0311200	0.028640
875099	0.06950	0.02344	0.0000000	0.000000
875263	0.10340	0.13530	0.1085000	0.045620
87556202	0.10440	0.19800	0.1697000	0.088780
875878	0.07941	0.05366	0.0387300	0.023770
875938	0.12000	0.12670	0.1385000	0.065260
877159	0.07371	0.08642	0.1103000	0.057780
877486	0.08523	0.14280	0.1114000	0.067720
877500	0.09872	0.12060	0.1180000	0.059800

877501	0.09586	0.08087	0.0418700	0.041070
877989	0.08968	0.11980	0.1036000	0.074880
878796	0.11410	0.20840	0.3523000	0.162000
87880	0.13230	0.17680	0.1558000	0.091760
87930	0.09965	0.10580	0.0800500	0.038210
879523	0.08876	0.09588	0.0755000	0.040790
879804	0.10890	0.07232	0.0175600	0.019520
879830	0.08772	0.07304	0.0695000	0.053900
8810158	0.10020	0.14830	0.0870500	0.051020
8810436	0.08182	0.06230	0.0589200	0.031570
881046502	0.09090	0.13480	0.1640000	0.095610
8810528	0.08871	0.06900	0.0266900	0.013930
8810703	0.11420	0.15160	0.3201000	0.159500
881094802	0.10060	0.11460	0.1682000	0.065970
8810955	0.09463	0.13060	0.1115000	0.064620
8810987	0.10260	0.15170	0.0990100	0.056020
8811523	0.09363	0.11540	0.0663600	0.031420
8811779	0.08054	0.05907	0.0577400	0.010710
8811842	0.09383	0.13060	0.1272000	0.086910
88119002	0.08420	0.11300	0.1145000	0.066370
8812816	0.09646	0.08711	0.0388800	0.025630
8812818	0.10510	0.11920	0.0786000	0.044510
8812844	0.10610	0.08502	0.0176800	0.019150
8812877	0.10250	0.12040	0.1147000	0.064620
8813129	0.08445	0.04994	0.0355400	0.024560
88143502	0.09906	0.07624	0.0572400	0.046030
88147101	0.10530	0.07722	0.0066430	0.012160
88147102	0.08371	0.10960	0.0650500	0.037800
88147202	0.07903	0.07529	0.0543800	0.020360
881861	0.10880	0.17990	0.1695000	0.068610
881972	0.11410	0.15720	0.1910000	0.109000
88199202	0.06883	0.03813	0.0163300	0.003125
88203002	0.07780	0.03574	0.0049670	0.006434
88206102	0.09159	0.10740	0.1554000	0.083400
882488	0.08464	0.04087	0.0165200	0.016670
88249602	0.09070	0.06945	0.0146200	0.018960
88299702	0.09509	0.16820	0.1950000	0.123700
883263	0.08355	0.08348	0.0904200	0.060220
883270	0.08223	0.10390	0.1103000	0.044080
88330202	0.09812	0.12980	0.1417000	0.088110
88350402	0.09423	0.06630	0.0470500	0.037310
883539	0.07926	0.03393	0.0105300	0.011080
883852	0.09592	0.13250	0.1548000	0.028540

88411702	0.08043	0.06807	0.0469700	0.023440
884180	0.10270	0.15580	0.2049000	0.088860
884437	0.10700	0.05971	0.0483100	0.030700
884448	0.07215	0.04524	0.0433600	0.011050
884626	0.08760	0.13460	0.1374000	0.039800
88466802	0.09657	0.07234	0.0237900	0.016150
884689	0.10130	0.07808	0.0432800	0.029290
884948	0.10070	0.16060	0.2712000	0.131000
88518501	0.09345	0.05991	0.0263800	0.020690
885429	0.10620	0.18490	0.2417000	0.097400
8860702	0.10080	0.10410	0.1266000	0.083530
886226	0.10350	0.11880	0.1379000	0.085910
886452	0.10960	0.12790	0.0978900	0.052460
88649001	0.09260	0.20630	0.1784000	0.114400
886776	0.13350	0.22840	0.2448000	0.124200
887181	0.11090	0.31140	0.3176000	0.137700
88725602	0.10630	0.16390	0.1751000	0.083990
887549	0.10000	0.10880	0.1519000	0.093330
888264	0.08662	0.06290	0.0289100	0.028370
888570	0.08999	0.12730	0.0969700	0.075070
889403	0.07840	0.05616	0.0420900	0.028470
889719	0.09726	0.08995	0.0906100	0.065270
88995002	0.09469	0.11430	0.1367000	0.086460
8910251	0.09688	0.11470	0.0638700	0.026420
8910499	0.07956	0.08259	0.0407200	0.021420
8910506	0.09425	0.06219	0.0390000	0.016150
8910720	0.10820	0.12890	0.0844800	0.028670
8910721	0.06429	0.02675	0.0072500	0.006250
8910748	0.09834	0.07608	0.0326500	0.027550
8910988	0.09401	0.19610	0.2195000	0.108800
8910996	0.09037	0.04689	0.0110300	0.014070
8911163	0.08855	0.07027	0.0569900	0.047440
8911164	0.12250	0.07210	0.0592900	0.074040
8911230	0.09379	0.03872	0.0014870	0.003333
8911670	0.08923	0.05884	0.0802000	0.058430
8911800	0.07948	0.04052	0.0199700	0.012380
8911834	0.09516	0.07688	0.0447900	0.037110
8912049	0.10200	0.14530	0.1921000	0.096640
8912055	0.07813	0.04340	0.0224500	0.027630
89122	0.10370	0.14420	0.1626000	0.094640
8912280	0.10660	0.18020	0.1948000	0.090520
8912284	0.07818	0.09580	0.1115000	0.033900
8912521	0.08393	0.04216	0.0018600	0.002924

8912909	0.08605	0.10110	0.0657400	0.037910
8913	0.06955	0.03729	0.0226000	0.011710
8913049	0.08020	0.11810	0.0927400	0.055880
89143601	0.08713	0.05008	0.0239900	0.021730
89143602	0.08757	0.16760	0.1362000	0.066020
8915	0.08992	0.09823	0.0594000	0.048190
891670	0.10050	0.07943	0.0615500	0.033700
891703	0.08372	0.05642	0.0268800	0.022800
891716	0.09667	0.08393	0.0128800	0.019240
891923	0.09198	0.06221	0.0106300	0.019170
891936	0.08518	0.04721	0.0123600	0.013690
892189	0.09968	0.05914	0.0268500	0.035150
892214	0.06576	0.05220	0.0247500	0.013740
892399	0.10150	0.06797	0.0249500	0.018750
892438	0.11500	0.16420	0.2197000	0.106200
892604	0.08451	0.10140	0.0683000	0.030990
89263202	0.10800	0.18380	0.2283000	0.128000
892657	0.10680	0.06678	0.0229700	0.017800
89296	0.08853	0.07694	0.0334400	0.015020
893061	0.07474	0.05688	0.0197400	0.013130
89344	0.08511	0.05251	0.0014610	0.003261
89346	0.07005	0.03116	0.0036810	0.003472
893526	0.07376	0.03614	0.0027580	0.004419
893548	0.08352	0.03735	0.0045590	0.008829
893783	0.08814	0.05253	0.0158300	0.011480
89382601	0.07618	0.03515	0.0144700	0.018770
89382602	0.08794	0.07948	0.0405200	0.025480
893988	0.08597	0.05969	0.0136700	0.008907
894047	0.10740	0.05847	0.0000000	0.000000
894089	0.08511	0.03834	0.0044730	0.006423
894090	0.07734	0.03212	0.0112300	0.005051
894326	0.09746	0.11170	0.1130000	0.079500
894329	0.09968	0.19720	0.1975000	0.049080
894335	0.07557	0.03454	0.0134200	0.016990
894604	0.10610	0.11110	0.0672600	0.039650
894618	0.08020	0.08564	0.1155000	0.077260
894855	0.11340	0.08834	0.0380000	0.034000
895100	0.11700	0.18750	0.2565000	0.150400
89511501	0.08673	0.06545	0.0199400	0.016920
89511502	0.10280	0.07664	0.0319300	0.021070
89524	0.09309	0.05306	0.0176500	0.027330
895299	0.07683	0.03892	0.0015460	0.005592
8953902	0.11690	0.13190	0.1478000	0.084880

895633	0.11650	0.12830	0.1799000	0.079810
896839	0.09491	0.13710	0.1204000	0.070410
896864	0.09579	0.11250	0.0710700	0.029500
897132	0.10540	0.06779	0.0050060	0.007583
897137	0.08306	0.04458	0.0009737	0.002941
897374	0.08313	0.04202	0.0077560	0.008535
89742801	0.11190	0.10560	0.1508000	0.099340
897604	0.09462	0.09965	0.0373800	0.020980
897630	0.09116	0.14020	0.1060000	0.060900
897880	0.10070	0.07326	0.0251100	0.017750
89812	0.10690	0.12830	0.2308000	0.141000
89813	0.09751	0.11390	0.0800700	0.042230
898143	0.08481	0.09228	0.0842200	0.022920
89827	0.10330	0.09097	0.0539700	0.033410
898431	0.09797	0.13390	0.1863000	0.110300
89864002	0.11500	0.07281	0.0400600	0.032500
898677	0.09882	0.09159	0.0358100	0.020370
898678	0.08386	0.05794	0.0075100	0.008488
89869	0.08875	0.07780	0.0460800	0.035280
898690	0.09076	0.05886	0.0258700	0.023220
899147	0.11580	0.12060	0.0117100	0.017870
899187	0.07561	0.03630	0.0083060	0.011620
899667	0.12430	0.23640	0.2914000	0.124200
899987	0.11490	0.23630	0.3368000	0.191300
9010018	0.10240	0.09769	0.1235000	0.065530
901011	0.07274	0.06064	0.0450500	0.014710
9010258	0.08760	0.10380	0.1030000	0.043910
9010259	0.10820	0.13040	0.0960300	0.056030
901028	0.08743	0.05492	0.0150200	0.020880
9010333	0.08293	0.07698	0.0472100	0.023810
901034301	0.10090	0.05956	0.0271000	0.014060
901034302	0.07436	0.02650	0.0011940	0.005449
901041	0.08582	0.06373	0.0334400	0.024240
9010598	0.09676	0.07952	0.0268800	0.017810
9010872	0.09686	0.08468	0.0586200	0.048350
9010877	0.07937	0.05696	0.0218100	0.014730
901088	0.09150	0.11310	0.0979900	0.077850
9011494	0.09905	0.16690	0.1641000	0.126500
9011495	0.09231	0.07175	0.0439200	0.020270
9011971	0.09384	0.08562	0.1168000	0.084650
9012000	0.10630	0.19540	0.2448000	0.150100
9012315	0.09742	0.14970	0.1811000	0.087730
9012568	0.07963	0.06934	0.0339300	0.026570

9012795	0.10010	0.15150	0.1932000	0.125500
901288	0.09446	0.10760	0.1527000	0.089410
9013005	0.08302	0.06374	0.0255600	0.020310
901303	0.09880	0.14380	0.0665100	0.053970
901315	0.09073	0.16600	0.2280000	0.059410
9013579	0.07517	0.04726	0.0127100	0.011170
9013594	0.08268	0.07548	0.0424900	0.024710
9013838	0.12160	0.21540	0.1689000	0.063670
901549	0.12370	0.11110	0.0790000	0.055500
901836	0.07987	0.07079	0.0354600	0.020740
90250	0.06935	0.10730	0.0794300	0.029780
90251	0.10420	0.12970	0.0589200	0.028800
902727	0.08363	0.08575	0.0507700	0.028640
90291	0.08682	0.06636	0.0839000	0.052710
902975	0.08108	0.07823	0.0683900	0.025340
902976	0.07026	0.04831	0.0204500	0.008507
903011	0.08365	0.11140	0.1007000	0.027570
90312	0.10100	0.13180	0.1856000	0.102100
90317302	0.09996	0.07542	0.0192300	0.019680
903483	0.10390	0.07428	0.0000000	0.000000
903507	0.11600	0.15620	0.1891000	0.091130
903516	0.11670	0.20870	0.2810000	0.156200
903554	0.10290	0.09758	0.0478300	0.033260
903811	0.08045	0.05361	0.0268100	0.032510
90401601	0.10590	0.11470	0.0858000	0.053810
90401602	0.08044	0.08895	0.0739000	0.040830
904302	0.07741	0.04768	0.0271200	0.007246
904357	0.09087	0.06232	0.0285300	0.016380
90439701	0.12300	0.25760	0.3189000	0.119800
904647	0.08872	0.05242	0.0260600	0.017960
904689	0.07351	0.07899	0.0405700	0.018830
9047	0.09879	0.08836	0.0329600	0.023900
904969	0.08682	0.04571	0.0210900	0.020540
904971	0.10040	0.07460	0.0494400	0.029320
905189	0.09495	0.08501	0.0550000	0.045280
905190	0.07551	0.08316	0.0612600	0.018670
90524101	0.10360	0.13040	0.1201000	0.088240
905501	0.08685	0.06526	0.0321100	0.026530
905502	0.08858	0.05313	0.0278300	0.021000
905520	0.10770	0.07804	0.0304600	0.024800
905539	0.07969	0.06053	0.0373500	0.005128
905557	0.08515	0.10250	0.0685900	0.038760
905680	0.08320	0.04605	0.0468600	0.027390

905686	0.09773	0.08120	0.0255500	0.021790
905978	0.10440	0.06159	0.0204700	0.012570
90602302	0.11200	0.15710	0.1522000	0.084810
906024	0.08785	0.05794	0.0236000	0.024020
906290	0.10180	0.05978	0.0089550	0.010760
906539	0.08546	0.07722	0.0548500	0.014280
906564	0.10310	0.18360	0.1450000	0.063000
906616	0.10880	0.11680	0.0709700	0.044970
906878	0.09057	0.11470	0.0965700	0.048120
907145	0.10750	0.08333	0.0089340	0.019670
907367	0.08117	0.03912	0.0024700	0.005159
907409	0.09816	0.10130	0.0633500	0.022180
90745	0.08801	0.05743	0.0361400	0.014040
90769601	0.08151	0.03834	0.0136900	0.013700
90769602	0.07896	0.04522	0.0140200	0.018350
907914	0.09947	0.22250	0.2733000	0.097110
907915	0.10540	0.13160	0.0774100	0.027990
908194	0.11330	0.14890	0.2133000	0.125900
908445	0.10180	0.13890	0.1594000	0.087440
908469	0.08924	0.07074	0.0334600	0.028770
908489	0.10600	0.11330	0.1126000	0.064630
908916	0.09136	0.07883	0.0179700	0.020900
909220	0.08458	0.05895	0.0353400	0.029440
909231	0.08684	0.06330	0.0134200	0.022930
909410	0.07966	0.05581	0.0208700	0.026520
909411	0.08915	0.11130	0.0945700	0.036130
909445	0.08331	0.11090	0.1204000	0.057360
90944601	0.08817	0.06718	0.0105500	0.009937
909777	0.08142	0.04462	0.0199300	0.011110
9110127	0.08947	0.12320	0.1090000	0.062540
9110720	0.10300	0.09218	0.0544100	0.042740
9110732	0.09997	0.13140	0.1698000	0.082930
9110944	0.09179	0.08890	0.0406900	0.022600
911150	0.08388	0.07800	0.0881700	0.029250
911157302	0.09684	0.11750	0.1572000	0.115500
9111596	0.06613	0.10640	0.0877700	0.023860
9111805	0.10320	0.09871	0.1655000	0.090630
9111843	0.08437	0.06450	0.0405500	0.019450
911201	0.10990	0.09242	0.0689500	0.064950
911202	0.08583	0.05430	0.0296600	0.022720
9112085	0.09245	0.07426	0.0281900	0.032640
9112366	0.09357	0.08574	0.0716000	0.020170
9112367	0.08791	0.05205	0.0277200	0.020680

9112594	0.08369	0.05073	0.0120600	0.017620
9112712	0.07984	0.04626	0.0154100	0.010430
911296201	0.09898	0.11100	0.1007000	0.064310
911296202	0.10840	0.19880	0.3635000	0.168900
9113156	0.06995	0.05223	0.0347600	0.017370
911320501	0.08508	0.05855	0.0336700	0.017770
911320502	0.07466	0.05994	0.0485900	0.028700
9113239	0.08284	0.12230	0.1010000	0.028330
9113455	0.08675	0.10890	0.1085000	0.035100
9113514	0.08311	0.05428	0.0147900	0.005769
9113538	0.09289	0.20040	0.2136000	0.100200
911366	0.11750	0.14830	0.1020000	0.055640
9113778	0.08946	0.06258	0.0294800	0.015140
9113816	0.08752	0.06000	0.0236700	0.023770
911384	0.08098	0.08549	0.0553900	0.032210
9113846	0.07699	0.03398	0.0000000	0.000000
911391	0.10070	0.10690	0.0511500	0.015710
911408	0.09040	0.08269	0.0583500	0.030780
911654	0.08931	0.11080	0.0506300	0.030580
911673	0.06828	0.05319	0.0222400	0.013390
911685	0.10460	0.08228	0.0530800	0.019690
911916	0.10260	0.18930	0.2236000	0.091940
912193	0.09087	0.07838	0.0291600	0.015270
91227	0.07991	0.05326	0.0299500	0.020700
912519	0.10710	0.11550	0.0578600	0.052660
912558	0.09950	0.07957	0.0454800	0.031600
912600	0.10430	0.12990	0.1191000	0.062110
913063	0.09514	0.15110	0.1544000	0.048460
913102	0.08641	0.06698	0.0519200	0.027910
913505	0.10890	0.14480	0.2256000	0.119400
913512	0.11280	0.09263	0.0427900	0.031320
913535	0.07497	0.07112	0.0364900	0.023070
91376701	0.08192	0.05200	0.0171400	0.012610
91376702	0.07838	0.06217	0.0444500	0.041780
914062	0.10010	0.12890	0.1170000	0.077620
914101	0.07372	0.04043	0.0071730	0.011490
914102	0.07335	0.05275	0.0180000	0.012560
914333	0.09587	0.08345	0.0682400	0.049510
914366	0.10760	0.13340	0.0801700	0.050740
914580	0.08928	0.07630	0.0360900	0.023690
914769	0.10120	0.13170	0.1491000	0.091830
91485	0.10850	0.16440	0.2188000	0.112100
914862	0.09883	0.13640	0.0772100	0.061420

91504	0.11620	0.16810	0.1357000	0.067590
91505	0.11580	0.10850	0.0592800	0.032790
915143	0.09342	0.12750	0.1676000	0.100300
915186	0.16340	0.22390	0.0973000	0.052520
915276	0.12550	0.22040	0.1188000	0.070380
91544001	0.10960	0.11520	0.0817500	0.021660
91544002	0.11940	0.10710	0.0406300	0.042680
915452	0.09427	0.06712	0.0552600	0.045630
915460	0.11830	0.18700	0.2030000	0.085200
91550	0.08099	0.09661	0.0672600	0.026390
915664	0.08472	0.05016	0.0341600	0.025410
915691	0.11060	0.14690	0.1445000	0.081720
915940	0.09832	0.08918	0.0822200	0.043490
91594602	0.09215	0.08597	0.0748600	0.043350
916221	0.10490	0.08499	0.0430200	0.025940
916799	0.10680	0.12480	0.1569000	0.094510
916838	0.10370	0.13100	0.1411000	0.094310
917062	0.12180	0.16610	0.0482500	0.053030
917080	0.11250	0.11170	0.0388000	0.029950
917092	0.13710	0.12250	0.0333200	0.024210
91762702	0.10300	0.21060	0.2310000	0.147100
91789	0.08511	0.04413	0.0050670	0.005664
917896	0.09916	0.10700	0.0538500	0.037830
917897	0.09492	0.08419	0.0233000	0.024160
91805	0.10360	0.07632	0.0256500	0.015100
91813701	0.10750	0.11380	0.0420100	0.031520
91813702	0.09003	0.06307	0.0295800	0.026470
918192	0.12480	0.09755	0.1010000	0.066150
918465	0.11000	0.09009	0.0378100	0.027980
91858	0.10730	0.09713	0.0528200	0.044400
91903901	0.10160	0.09453	0.0420000	0.021570
91903902	0.09277	0.07255	0.0175200	0.018800
91930402	0.09156	0.13130	0.1523000	0.101500
919537	0.09687	0.09752	0.0526300	0.027880
919555	0.10460	0.17390	0.2085000	0.132200
91979701	0.10380	0.11540	0.1463000	0.061390
919812	0.12360	0.15520	0.0451500	0.045310
921092	0.08098	0.04878	0.0000000	0.000000
921362	0.08668	0.11990	0.0925200	0.013640
921385	0.09984	0.11200	0.0673700	0.025940
921386	0.08837	0.12300	0.1009000	0.038900
921644	0.08275	0.07214	0.0410500	0.030270
922296	0.08671	0.06877	0.0298700	0.032750

922297	0.09578	0.10180	0.0368800	0.023690
922576	0.09246	0.06747	0.0297400	0.024430
922577	0.09434	0.04994	0.0101200	0.005495
922840	0.08877	0.08066	0.0435800	0.024380
923169	0.08491	0.05030	0.0233700	0.009615
923465	0.08192	0.06602	0.0154800	0.008160
923748	0.07431	0.04227	0.0000000	0.000000
923780	0.09566	0.08194	0.0482400	0.022570
924084	0.08276	0.04234	0.0199700	0.014990
924342	0.09240	0.05605	0.0399600	0.012820
924632	0.08123	0.05824	0.0619500	0.023430
924934	0.09030	0.07658	0.0599900	0.027380
924964	0.10030	0.07504	0.0050250	0.011160
925236	0.08123	0.04971	0.0000000	0.000000
925277	0.08473	0.13300	0.1029000	0.037360
925291	0.09261	0.10210	0.1112000	0.041050
925292	0.09929	0.11260	0.0446200	0.043040
925311	0.07449	0.03558	0.0000000	0.000000
925622	0.10480	0.20870	0.2550000	0.094290
926125	0.10990	0.22360	0.3174000	0.147400
926424	0.11100	0.11590	0.2439000	0.138900
926682	0.09780	0.10340	0.1440000	0.097910
926954	0.08455	0.10230	0.0925100	0.053020
927241	0.11780	0.27700	0.3514000	0.152000
92751	0.05263	0.04362	0.0000000	0.000000

	symmetry_mean	fractal_dimension_mean	radius_se	texture_se
842302	0.2419	0.07871	1.0950	0.9053
842517	0.1812	0.05667	0.5435	0.7339
84300903	0.2069	0.05999	0.7456	0.7869
84348301	0.2597	0.09744	0.4956	1.1560
84358402	0.1809	0.05883	0.7572	0.7813
843786	0.2087	0.07613	0.3345	0.8902
844359	0.1794	0.05742	0.4467	0.7732
84458202	0.2196	0.07451	0.5835	1.3770
844981	0.2350	0.07389	0.3063	1.0020
84501001	0.2030	0.08243	0.2976	1.5990
845636	0.1528	0.05697	0.3795	1.1870
84610002	0.1842	0.06082	0.5058	0.9849
846226	0.2397	0.07800	0.9555	3.5680
846381	0.1847	0.05338	0.4033	1.0780
84667401	0.2069	0.07682	0.2121	1.1690
84799002	0.2303	0.07077	0.3700	1.0330
848406	0.1586	0.05922	0.4727	1.2400

84862001	0.2164	0.07356	0.5692	1.0730
849014	0.1582	0.05395	0.7582	1.0170
8510426	0.1885	0.05766	0.2699	0.7886
8510653	0.1967	0.06811	0.1852	0.7477
8510824	0.1815	0.06905	0.2773	0.9768
8511133	0.2521	0.07032	0.4388	0.7096
851509	0.1769	0.05278	0.6917	1.1270
852552	0.1995	0.06330	0.8068	0.9017
852631	0.3040	0.07413	1.0460	0.9760
852763	0.2252	0.06924	0.2545	0.9832
852781	0.1697	0.05699	0.8529	1.8490
852973	0.1926	0.06540	0.4390	1.0120
853201	0.1739	0.06149	0.6003	0.8225
853401	0.2183	0.06197	0.8307	1.4660
853612	0.2301	0.07799	0.4825	1.0300
85382601	0.2248	0.06382	0.6009	1.3980
854002	0.1853	0.06261	0.5558	0.6062
854039	0.1998	0.06515	0.3340	0.6857
854253	0.1896	0.05656	0.4615	0.9197
854268	0.1885	0.06125	0.2860	1.0190
854941	0.1467	0.05863	0.1839	2.3420
855133	0.1565	0.05504	1.2140	2.1880
855138	0.1720	0.06419	0.2130	0.5914
855167	0.1784	0.05587	0.2385	0.8265
855563	0.1895	0.06870	0.2366	1.4280
855625	0.2310	0.06343	0.9811	1.6660
856106	0.1974	0.06782	0.3704	0.8249
85638502	0.1746	0.06177	0.1938	0.6123
857010	0.1907	0.06049	0.6289	0.6633
85713702	0.1769	0.06503	0.1563	0.9567
85715	0.2128	0.06777	0.2871	0.8937
857155	0.1675	0.06043	0.2636	0.7294
857156	0.1809	0.05718	0.2338	1.3530
857343	0.1495	0.05888	0.4062	1.2100
857373	0.1353	0.05953	0.1872	0.9234
857374	0.1868	0.06110	0.2273	0.6329
857392	0.2092	0.06310	0.8337	1.5930
857438	0.1616	0.05684	0.3105	0.8339
85759902	0.1920	0.05907	0.3249	0.9591
857637	0.1917	0.05961	0.7275	1.1930
857793	0.2027	0.06758	0.4226	1.1500
857810	0.1819	0.05501	0.4040	1.2140
858477	0.1683	0.07187	0.1559	0.5796

858970	0.2743	0.06960	0.5158	1.4410
858981	0.1828	0.06757	0.3582	2.0670
858986	0.1949	0.07292	0.7036	1.2680
859196	0.2341	0.06963	0.4098	2.2650
85922302	0.1905	0.06590	0.4255	1.1780
859283	0.1953	0.06654	0.3577	1.2810
859464	0.1717	0.06899	0.2351	2.0110
859465	0.1516	0.05667	0.2727	0.9429
859471	0.2111	0.08046	0.3274	1.1940
859487	0.1590	0.05653	0.2368	0.8732
859575	0.1582	0.05461	0.7888	0.7975
859711	0.1902	0.08980	0.5262	0.8522
859717	0.1927	0.06487	0.5907	1.0410
859983	0.1662	0.06566	0.2787	0.6205
8610175	0.1720	0.05914	0.2505	1.0250
8610404	0.1798	0.05391	0.7474	1.0160
8610629	0.2403	0.06641	0.4101	1.0140
8610637	0.2152	0.06673	0.9806	0.5505
8610862	0.2906	0.08142	0.9317	1.8850
8610908	0.1718	0.05997	0.2655	1.0950
861103	0.1842	0.07005	0.3251	2.1740
8611161	0.1942	0.06902	0.2860	1.0160
8611555	0.1829	0.06782	0.8973	1.4740
8611792	0.1634	0.07224	0.5190	2.9100
8612080	0.2079	0.05968	0.2271	1.2550
8612399	0.2132	0.06022	0.6997	1.4750
86135501	0.2075	0.05636	0.4204	2.2200
86135502	0.1953	0.05629	0.5495	0.6636
861597	0.1930	0.06404	0.2978	1.5020
861598	0.2116	0.06346	0.5115	0.7372
861648	0.1685	0.05866	0.3721	1.1110
861799	0.1717	0.06097	0.3129	0.8413
861853	0.1386	0.05318	0.4057	1.1530
862009	0.1638	0.05710	0.2950	1.3730
862028	0.1855	0.06284	0.4768	0.9644
86208	0.2095	0.05649	0.7576	1.5090
86211	0.1900	0.06635	0.3661	1.5110
862261	0.1350	0.06890	0.3350	2.0430
862485	0.1620	0.06582	0.2315	0.5391
862548	0.1879	0.06390	0.2895	1.8510
862717	0.1609	0.05871	0.4565	1.2900
862722	0.1930	0.07818	0.2241	1.5080
862965	0.1739	0.05677	0.1924	1.5710

862980	0.1945	0.06322	0.1803	1.2220
862989	0.2217	0.06481	0.3550	1.5340
863030	0.1925	0.07692	0.3908	0.9238
863031	0.1801	0.06520	0.3060	1.6570
863270	0.1602	0.06066	0.1199	0.8944
86355	0.2556	0.07039	1.2150	1.5450
864018	0.1487	0.06529	0.2344	0.9861
864033	0.1584	0.07065	0.4030	1.4240
86408	0.1735	0.07070	0.3424	1.8030
86409	0.1704	0.07769	0.3628	1.4900
864292	0.1922	0.07782	0.3336	1.8600
864496	0.1649	0.07633	0.1665	0.5864
864685	0.1688	0.06194	0.3118	0.9227
864726	0.1305	0.07163	0.3132	0.9789
864729	0.2157	0.06768	0.4266	0.9489
864877	0.2096	0.07331	0.5520	1.0720
865128	0.2129	0.05025	0.5506	1.2140
865137	0.1667	0.06113	0.1408	0.4607
86517	0.1966	0.06213	0.7128	1.5810
865423	0.2655	0.06877	1.5090	3.1200
865432	0.1856	0.06402	0.2929	0.8570
865468	0.1422	0.05823	0.1639	1.1400
86561	0.1614	0.05890	0.2185	0.8561
866083	0.1761	0.06130	0.2310	1.0050
866203	0.1946	0.05044	0.6896	1.3420
866458	0.2001	0.06467	0.4309	1.0680
866674	0.2202	0.06113	0.4953	1.1990
866714	0.1880	0.06471	0.2005	0.8163
8670	0.1931	0.05796	0.4743	0.7859
86730502	0.2160	0.05891	0.4332	1.2650
867387	0.1816	0.05723	0.3117	0.8155
867739	0.1692	0.05727	0.5959	1.2020
868202	0.1585	0.06065	0.2367	1.3800
868223	0.1339	0.05945	0.4489	2.5080
868682	0.1734	0.05865	0.1759	0.9938
868826	0.1957	0.06216	1.2960	1.4520
868871	0.1771	0.06072	0.3384	1.3430
868999	0.1903	0.06422	0.1988	0.4960
869104	0.1861	0.06248	0.7049	1.3320
869218	0.1645	0.06562	0.2843	1.9080
869224	0.1778	0.06235	0.2143	0.7712
869254	0.1399	0.05688	0.2525	1.2390
869476	0.1995	0.07839	0.3962	0.6538

869691	0.2678	0.07371	0.3197	1.4260
86973701	0.1744	0.06493	0.4220	1.9090
86973702	0.1724	0.06081	0.2406	0.7394
869931	0.1473	0.05580	0.2500	0.7574
871001501	0.2540	0.06087	0.4202	1.3220
871001502	0.2222	0.08261	0.1935	1.9620
8710441	0.2548	0.09296	0.8245	2.6640
87106	0.1830	0.06105	0.2251	0.7815
8711002	0.1822	0.06207	0.2710	0.7927
8711003	0.1970	0.06228	0.2200	0.9823
8711202	0.1971	0.06166	0.8113	1.4000
8711216	0.1844	0.05268	0.4789	2.0600
871122	0.1590	0.05907	0.1822	0.7285
871149	0.1442	0.05743	0.2818	0.7614
8711561	0.1993	0.06453	0.5018	1.6930
8711803	0.1741	0.05176	1.0000	0.6336
871201	0.2027	0.06082	0.7364	1.0480
8712064	0.1551	0.06761	0.2949	1.6560
8712289	0.1801	0.05553	0.6642	0.8561
8712291	0.1515	0.05266	0.1840	1.0650
87127	0.1381	0.06400	0.1728	0.4064
8712729	0.1893	0.05534	0.5990	1.3910
8712766	0.1538	0.06365	1.0880	1.4100
8712853	0.1780	0.05650	0.2713	1.2170
87139402	0.1959	0.05955	0.2360	0.6656
87163	0.1598	0.05671	0.4697	1.1470
87164	0.1966	0.07069	0.4209	0.6583
871641	0.1566	0.06669	0.2073	1.8050
871642	0.1928	0.05975	0.3309	1.9250
872113	0.1722	0.06724	0.2204	0.7873
872608	0.1669	0.08116	0.4311	2.2610
87281702	0.1794	0.06323	0.3037	1.2840
873357	0.1395	0.05234	0.1731	1.1420
873586	0.1466	0.06133	0.2889	0.9899
873592	0.1800	0.05770	0.8361	1.4810
873593	0.2395	0.07398	0.6298	0.7629
873701	0.1618	0.05549	0.3699	1.1500
873843	0.1167	0.06217	0.3344	1.1080
873885	0.1727	0.06317	0.2054	0.4956
874158	0.1703	0.06048	0.4245	1.2680
874217	0.1621	0.05425	0.2577	0.4757
874373	0.1516	0.06095	0.2451	0.7655
874662	0.1718	0.05780	0.1859	1.9260

874839	0.1667	0.05474	0.2382	0.8355
874858	0.2384	0.07542	0.2860	2.1100
875093	0.1694	0.06287	0.7311	1.7480
875099	0.1653	0.06447	0.3539	4.8850
875263	0.1943	0.06937	0.4053	1.8090
87556202	0.1737	0.06672	0.2796	0.9622
875878	0.1829	0.05667	0.1942	0.9086
875938	0.1834	0.06877	0.6191	2.1120
877159	0.1770	0.05340	0.6362	1.3050
877486	0.1767	0.05529	0.4357	1.0730
877500	0.1950	0.06466	0.2092	0.6509
877501	0.1979	0.06013	0.3534	1.3260
877989	0.1506	0.05491	0.3971	0.8282
878796	0.2200	0.06229	0.5539	1.5600
87880	0.2251	0.07421	0.5648	1.9300
87930	0.1925	0.06373	0.3961	1.0440
879523	0.1594	0.05986	0.2711	0.3621
879804	0.1934	0.06285	0.2137	1.3420
879830	0.2026	0.05223	0.5858	0.8554
8810158	0.1850	0.07310	0.1931	0.9223
8810436	0.1359	0.05526	0.2134	0.3628
881046502	0.1765	0.05024	0.8601	1.4800
8810528	0.1533	0.06057	0.2222	0.8652
8810703	0.1648	0.05525	2.8730	1.4760
881094802	0.1308	0.05866	0.5296	1.6670
8810955	0.2235	0.06433	0.4207	1.8450
8810987	0.2106	0.06916	0.2563	1.1940
8811523	0.1967	0.06314	0.2963	1.5630
8811779	0.1964	0.06315	0.3567	1.9220
8811842	0.2094	0.05581	0.9553	1.1860
88119002	0.1428	0.05313	0.7392	1.3210
8812816	0.1360	0.06344	0.2102	0.4336
8812818	0.1962	0.06303	0.2569	0.4981
8812844	0.1910	0.06908	0.2467	1.2170
8812877	0.1935	0.06303	0.3473	0.9209
8813129	0.1496	0.05674	0.2927	0.8907
88143502	0.2075	0.05448	0.5220	0.8121
88147101	0.1788	0.06450	0.1913	0.9027
88147102	0.1881	0.05907	0.2318	0.4966
88147202	0.1514	0.06019	0.2449	1.0660
881861	0.2123	0.07254	0.3061	1.0690
881972	0.2131	0.06325	0.2959	0.6790
88199202	0.1869	0.05628	0.1210	0.8927

88203002	0.1845	0.05828	0.2239	1.6470
88206102	0.1448	0.05592	0.5240	1.1890
882488	0.1551	0.06403	0.2152	0.8301
88249602	0.1517	0.05835	0.2589	1.5030
88299702	0.1909	0.06309	1.0580	0.9635
883263	0.1467	0.05177	0.6874	1.0410
883270	0.1342	0.06129	0.3354	2.3240
88330202	0.1809	0.05966	0.5366	0.8561
88350402	0.1717	0.05660	0.3242	0.6612
883539	0.1546	0.05754	0.1153	0.6745
883852	0.2054	0.07669	0.2428	1.6420
88411702	0.1773	0.05429	0.4347	1.0570
884180	0.1978	0.06000	0.5243	1.8020
884437	0.1737	0.06440	0.3719	2.6120
884448	0.1487	0.05635	0.1630	1.6010
884626	0.1596	0.06409	0.2025	0.4402
88466802	0.1897	0.06329	0.2497	1.4930
884689	0.1883	0.06168	0.2562	1.0380
884948	0.2205	0.05898	1.0040	0.8208
88518501	0.1834	0.05934	0.3927	0.8429
885429	0.1733	0.06697	0.7661	0.7800
8860702	0.1813	0.05613	0.3093	0.8568
886226	0.1776	0.05647	0.5959	0.6342
886452	0.1908	0.06130	0.4250	0.8098
88649001	0.1893	0.06232	0.8426	1.1990
886776	0.2398	0.07596	0.6592	1.0590
887181	0.2495	0.08104	1.2920	2.4540
88725602	0.2091	0.06650	0.2419	1.2780
887549	0.1814	0.05572	0.3977	1.0330
888264	0.1564	0.05307	0.4007	1.3170
888570	0.2108	0.05464	0.8348	1.6330
889403	0.1547	0.05443	0.2298	0.9988
889719	0.1867	0.05580	0.4203	0.7383
88995002	0.1769	0.05674	1.1720	1.6170
8910251	0.1922	0.06491	0.4505	1.1970
8910499	0.1635	0.05859	0.3380	1.9160
8910506	0.2010	0.05769	0.2345	1.2190
8910720	0.1668	0.06862	0.3198	1.4890
8910721	0.1508	0.05376	0.1302	0.7198
8910748	0.1769	0.06270	0.1904	0.5293
8910988	0.1721	0.06194	1.1670	1.3520
8910996	0.2081	0.06312	0.2684	1.4090
8911163	0.1538	0.05510	0.4212	1.4330

8911164	0.2015	0.05875	0.6412	2.2930
8911230	0.1954	0.05821	0.2375	1.2800
8911670	0.1550	0.04996	0.3283	0.8280
8911800	0.1573	0.05520	0.2580	1.1660
8911834	0.2110	0.05853	0.2479	0.9195
8912049	0.1902	0.06220	0.6361	1.0010
8912055	0.2101	0.06113	0.5619	1.2680
89122	0.1893	0.05892	0.4709	0.9951
8912280	0.1876	0.06684	0.2873	0.9173
8912284	0.1432	0.05935	0.2913	1.3890
8912521	0.1697	0.05855	0.2719	1.3500
8912909	0.1588	0.06766	0.2742	1.3900
8913	0.1337	0.05581	0.1532	0.4690
8913049	0.2595	0.06233	0.4866	1.9050
89143601	0.2013	0.05955	0.2656	1.9740
89143602	0.1714	0.07192	0.8811	1.7700
8915	0.1879	0.05852	0.2877	0.9480
891670	0.1730	0.06470	0.2094	0.7636
891703	0.1875	0.05715	0.2070	1.2380
891716	0.1638	0.06100	0.1807	0.6931
891923	0.1592	0.05912	0.2191	0.6946
891936	0.1449	0.06031	0.1753	1.0270
892189	0.1619	0.06287	0.6450	2.1050
892214	0.1635	0.05586	0.2300	0.6690
892399	0.1695	0.06556	0.2868	1.1430
892438	0.1792	0.06552	1.1110	1.1610
892604	0.1781	0.06249	0.3642	1.0400
89263202	0.2249	0.07469	1.0720	1.7430
892657	0.1482	0.06600	0.1485	1.5630
89296	0.1411	0.06243	0.3278	1.0590
893061	0.1935	0.05878	0.2512	1.7860
89344	0.1632	0.05894	0.1903	0.5735
89346	0.1788	0.06833	0.1746	1.3050
893526	0.1365	0.05335	0.2244	0.6864
893548	0.1453	0.05518	0.3975	0.8285
893783	0.1936	0.06128	0.1601	1.4300
89382601	0.1632	0.05255	0.3160	0.9115
89382602	0.1601	0.06140	0.3265	0.6594
893988	0.1833	0.06100	0.1312	0.3602
894047	0.2163	0.07359	0.3368	2.7770
894089	0.1215	0.05673	0.1716	0.7151
894090	0.1673	0.05649	0.2113	0.5996
894326	0.1807	0.05664	0.4041	0.5503

894329	0.2330	0.08743	0.4653	1.9110
894335	0.1472	0.05561	0.3778	2.2000
894604	0.1743	0.07279	0.3677	1.4710
894618	0.1928	0.05096	0.5925	0.6863
894855	0.1543	0.06476	0.2212	1.0420
895100	0.2569	0.06670	0.5702	1.0230
89511501	0.1638	0.06129	0.2575	0.8073
89511502	0.1707	0.05984	0.2100	0.9505
89524	0.1373	0.05700	0.2571	1.0810
895299	0.1382	0.06070	0.2335	0.9097
8953902	0.1948	0.06277	0.4375	1.2320
895633	0.1869	0.06532	0.5706	1.4570
896839	0.1782	0.05976	0.3371	0.7476
896864	0.1761	0.06540	0.2684	0.5664
897132	0.1940	0.06028	0.2976	1.9660
897137	0.1773	0.06081	0.2144	0.9961
897374	0.1539	0.05945	0.1840	1.5320
89742801	0.1727	0.06071	0.8161	2.1290
897604	0.1652	0.07238	0.1814	0.6412
897630	0.1953	0.06083	0.6422	1.5300
897880	0.1890	0.06331	0.2619	2.0150
89812	0.1797	0.05506	1.0090	0.9245
89813	0.1912	0.06412	0.3491	0.7706
898143	0.2036	0.07125	0.1844	0.9429
89827	0.1776	0.06907	0.1601	0.8225
898431	0.2082	0.05715	0.6226	2.2840
89864002	0.2009	0.06506	0.3446	0.7395
898677	0.1633	0.07005	0.3380	2.5090
898678	0.1555	0.06048	0.2430	1.1520
89869	0.1521	0.05912	0.3428	0.3981
898690	0.1634	0.06372	0.1707	0.7615
899147	0.2459	0.06581	0.3610	1.0500
899187	0.1671	0.05731	0.3534	0.6724
899667	0.2375	0.07603	0.5204	1.3240
899987	0.1956	0.06121	0.9948	0.8509
9010018	0.1647	0.06464	0.6534	1.5060
901011	0.1690	0.06083	0.4222	0.8092
9010258	0.1533	0.06184	0.3602	1.4780
9010259	0.2035	0.06501	0.3106	1.5100
901028	0.1424	0.05883	0.2543	1.3630
9010333	0.1930	0.06621	0.5381	1.2000
901034301	0.1506	0.06959	0.5079	1.2470
901034302	0.1528	0.05185	0.3511	0.9527

901041	0.1815	0.05696	0.2621	1.5390
9010598	0.1759	0.06183	0.2213	1.2850
9010872	0.1495	0.05593	0.3389	1.4390
9010877	0.1650	0.05701	0.1584	0.6124
901088	0.1618	0.05557	0.5781	0.9168
9011494	0.1875	0.06020	0.9761	1.8920
9011495	0.1695	0.05916	0.2527	0.7786
9011971	0.1717	0.05054	1.2070	1.0510
9012000	0.1824	0.06140	1.0080	0.6999
9012315	0.2175	0.06218	0.4312	1.0220
9012568	0.1721	0.05544	0.1783	0.4125
9012795	0.1973	0.06183	0.3414	1.3090
901288	0.1571	0.05478	0.6137	0.6575
9013005	0.1872	0.05669	0.1705	0.5066
901303	0.1990	0.06572	0.1745	0.4890
901315	0.2188	0.08450	0.1115	1.2310
9013579	0.1421	0.05763	0.1689	1.1500
9013594	0.1792	0.05897	0.1402	0.5417
9013838	0.2196	0.07950	0.2114	1.0270
901549	0.2018	0.06914	0.2562	0.9858
901836	0.2003	0.06246	0.1642	1.0310
90250	0.1203	0.06659	0.1194	1.4340
90251	0.1779	0.06588	0.2608	0.8730
902727	0.1617	0.05594	0.1833	0.5308
90291	0.1627	0.05416	0.4157	1.6270
902975	0.1646	0.06154	0.2666	0.8309
902976	0.1607	0.05474	0.2541	0.6218
903011	0.1810	0.07252	0.3305	1.0670
90312	0.1989	0.05884	0.6107	2.8360
90317302	0.1800	0.06569	0.1911	0.5477
903483	0.1985	0.07098	0.5169	2.0790
903507	0.1929	0.06744	0.6470	1.3310
903516	0.2162	0.06606	0.6242	0.9209
903554	0.1937	0.06161	0.2841	1.6520
903811	0.1641	0.05764	0.1504	1.6850
90401601	0.1806	0.06079	0.2136	1.3320
90401602	0.1574	0.05750	0.3639	1.2650
904302	0.1535	0.06214	0.1855	0.6881
904357	0.1847	0.06019	0.3438	1.1400
90439701	0.2113	0.07115	0.4030	0.7747
904647	0.1601	0.05541	0.2522	1.0450
904689	0.1874	0.05899	0.2357	1.2990
9047	0.1735	0.06200	0.1458	0.9050

904969	0.1571	0.05708	0.3833	0.9078
904971	0.1486	0.06615	0.3796	1.7430
905189	0.1735	0.05875	0.2387	0.6372
905190	0.1580	0.06114	0.4993	1.7980
90524101	0.1992	0.06069	0.4537	0.8733
905501	0.1966	0.05597	0.3342	1.7810
905502	0.1601	0.05913	0.1916	1.5550
905520	0.1714	0.06340	0.1967	1.3870
905539	0.1274	0.06724	0.1186	1.1820
905557	0.1944	0.05913	0.3186	1.3360
905680	0.1852	0.05294	0.4681	1.6270
905686	0.2019	0.06290	0.2747	1.2030
905978	0.2025	0.06601	0.4302	2.8780
90602302	0.2085	0.06864	1.3700	1.2130
906024	0.1583	0.06275	0.2253	0.6457
906290	0.1615	0.06144	0.2865	1.6780
906539	0.2031	0.06267	0.2864	1.4400
906564	0.2086	0.07406	0.5462	1.5110
906616	0.1886	0.06320	0.2456	0.7339
906878	0.1848	0.06181	0.2244	0.8950
907145	0.2538	0.07029	0.6965	1.7470
907367	0.1630	0.06439	0.1851	1.3410
907409	0.1925	0.06915	0.3276	1.1270
90745	0.2016	0.05977	0.3077	1.6210
90769601	0.1511	0.06148	0.1415	0.9671
90769602	0.1459	0.05544	0.2954	0.8836
907914	0.2041	0.06898	0.2530	0.8749
907915	0.1811	0.07102	0.1767	1.4600
908194	0.1724	0.06053	0.4331	1.0010
908445	0.1943	0.06132	0.8191	1.9310
908469	0.1573	0.05703	0.3028	0.6683
908489	0.1669	0.06544	0.2208	0.9533
908916	0.1861	0.06347	0.3665	0.7693
909220	0.1714	0.05898	0.3892	1.0460
909231	0.1555	0.05673	0.3419	1.6780
909410	0.1589	0.05586	0.2142	0.6549
909411	0.1489	0.06640	0.2574	1.3760
909445	0.1467	0.05407	0.5100	1.6790
90944601	0.1405	0.05848	0.3563	0.4833
909777	0.2372	0.05768	0.1818	2.5420
9110127	0.1720	0.05780	0.2986	0.5906
9110720	0.1820	0.06850	0.2623	1.2040
9110732	0.1713	0.05916	0.3897	1.0770

9110944	0.1893	0.05886	0.2204	0.6221
911150	0.1473	0.05746	0.2535	1.3540
911157302	0.1554	0.05661	0.6643	1.3610
9111596	0.1349	0.06612	0.2560	1.5540
9111805	0.1663	0.05391	0.4674	1.3750
9111843	0.1615	0.06104	0.1912	1.7050
911201	0.1650	0.06121	0.3060	0.7213
911202	0.1799	0.05826	0.1692	0.6674
9112085	0.1375	0.06016	0.3408	1.9240
9112366	0.1799	0.06166	0.3135	2.4260
9112367	0.1619	0.05584	0.2084	1.3500
9112594	0.1667	0.05449	0.2621	1.2320
9112712	0.1621	0.05952	0.1781	1.6870
911296201	0.1793	0.06281	0.9291	1.1520
911296202	0.2061	0.05623	2.5470	1.3060
9113156	0.1707	0.05433	0.2315	0.9112
911320501	0.1516	0.05859	0.1816	0.7656
911320502	0.1454	0.05549	0.2023	0.6850
9113239	0.1601	0.06432	0.2810	0.8135
9113455	0.1562	0.06020	0.3152	0.7884
9113514	0.1680	0.06412	0.3416	1.3120
9113538	0.1696	0.07369	0.9289	1.4650
911366	0.1957	0.07255	0.4101	1.7400
9113778	0.2238	0.06413	0.3776	1.3500
9113816	0.1854	0.05698	0.6061	2.6430
911384	0.1687	0.05669	0.2446	0.4334
9113846	0.1701	0.05960	0.4455	3.6470
911391	0.1861	0.06837	0.1482	0.5380
911408	0.1705	0.05913	0.1499	0.4875
911654	0.1506	0.06009	0.3478	1.0180
911673	0.1813	0.05536	0.1555	0.5762
911685	0.1779	0.06574	0.2034	1.1660
911916	0.2151	0.06578	0.3147	0.9857
912193	0.1464	0.06284	0.2194	1.1900
91227	0.1579	0.05594	0.3316	0.9264
912519	0.1779	0.06639	0.1588	0.5733
912558	0.1732	0.06088	0.2431	0.9462
912600	0.1784	0.06259	0.1630	0.3871
913063	0.2082	0.07325	0.3921	1.2070
913102	0.1409	0.05355	0.2204	1.0060
913505	0.1823	0.06115	0.5659	1.4080
913512	0.1853	0.06401	0.3713	1.1540
913535	0.1846	0.05325	0.2473	0.5679

91376701	0.1544	0.05976	0.2239	1.1390
91376702	0.1220	0.05243	0.4834	1.0460
914062	0.2116	0.06077	0.7548	1.2880
914101	0.1613	0.06013	0.3276	1.4860
914102	0.1713	0.05888	0.3237	1.4730
914333	0.1487	0.05748	0.2323	1.6360
914366	0.1641	0.06854	0.2324	0.6332
914580	0.1526	0.06046	0.1532	0.7810
914769	0.1832	0.06697	0.7923	1.0450
91485	0.1848	0.06222	0.5904	1.2160
914862	0.1668	0.06869	0.3720	0.8423
91504	0.2275	0.07237	0.4751	1.5280
91505	0.1943	0.06612	0.2577	1.0950
915143	0.1505	0.05484	1.2910	0.7452
915186	0.2378	0.09502	0.4076	1.0930
915276	0.2057	0.09575	0.2744	1.3900
91544001	0.2124	0.06894	0.1811	0.7959
91544002	0.1954	0.07976	0.1779	1.0300
915452	0.1711	0.05657	0.2067	0.4706
915460	0.1807	0.07083	0.3331	1.9610
91550	0.1499	0.06758	0.1924	0.6417
915664	0.1659	0.05348	0.2182	0.6232
915691	0.2116	0.07325	0.3906	0.9306
915940	0.1739	0.05640	0.4165	0.6237
91594602	0.1561	0.05915	0.3860	1.1980
916221	0.1927	0.06211	0.2430	1.0100
916799	0.1860	0.05941	0.5449	0.9225
916838	0.1802	0.06188	0.5079	0.8737
917062	0.1709	0.07253	0.4426	1.1690
917080	0.2120	0.06623	0.3834	1.0030
917092	0.2197	0.07696	0.3538	1.1300
91762702	0.1991	0.06739	0.9915	0.9004
91789	0.1637	0.06343	0.1344	1.0830
917896	0.1714	0.06843	0.3191	1.2490
917897	0.1387	0.06891	0.2498	1.2160
91805	0.1678	0.07126	0.1267	0.6793
91813701	0.1723	0.06317	0.1998	0.6068
91813702	0.1689	0.05808	0.1166	0.4957
918192	0.1976	0.06457	0.5461	2.6350
918465	0.1657	0.06608	0.2513	0.5040
91858	0.1598	0.06677	0.4384	1.9070
91903901	0.1859	0.06461	0.2067	0.8745
91903902	0.1631	0.06155	0.2047	0.4801

91930402	0.2166		0.05419	0.8336	1.7360
919537	0.1619		0.06408	0.1507	1.5830
919555	0.2127		0.06251	0.6986	0.9901
91979701	0.1926		0.05982	0.2027	1.8510
919812	0.2131		0.07405	0.2957	1.9780
921092	0.1870		0.07285	0.3777	1.4620
921362	0.2037		0.07751	0.2196	1.4790
921385	0.1818		0.06782	0.2784	1.7680
921386	0.1872		0.06341	0.2542	1.0790
921644	0.1840		0.05680	0.3031	1.3850
922296	0.1628		0.05781	0.2351	1.5970
922297	0.1620		0.06688	0.2720	1.0470
922576	0.1664		0.05801	0.3460	1.3360
922577	0.1885		0.06201	0.2104	0.9670
922840	0.1669		0.06714	0.1144	1.0230
923169	0.1580		0.06235	0.2957	1.3630
923465	0.1976		0.06328	0.5196	1.9180
923748	0.1661		0.05948	0.3163	1.3040
923780	0.2030		0.06552	0.2800	1.4670
924084	0.1539		0.05637	0.2409	1.3670
924342	0.1692		0.06576	0.3013	1.8790
924632	0.1566		0.05708	0.2116	1.3600
924934	0.1593		0.06127	0.2199	2.2390
924964	0.1791		0.06331	0.2441	2.0900
925236	0.1742		0.06059	0.5375	2.9270
925277	0.1454		0.06147	0.2254	1.1080
925291	0.1388		0.06570	0.2388	2.9040
925292	0.1537		0.06171	0.3645	1.4920
925311	0.1060		0.05502	0.3141	3.8960
925622	0.2128		0.07152	0.2602	1.2050
926125	0.2149		0.06879	0.9622	1.0260
926424	0.1726		0.05623	1.1760	1.2560
926682	0.1752		0.05533	0.7655	2.4630
926954	0.1590		0.05648	0.4564	1.0750
927241	0.2397		0.07016	0.7260	1.5950
92751	0.1587		0.05884	0.3857	1.4280

	perimeter_se	area_se	smoothness_se	compactness_se	concavity_se
842302	8.5890	153.400	0.006399	0.049040	0.0537300
842517	3.3980	74.080	0.005225	0.013080	0.0186000
84300903	4.5850	94.030	0.006150	0.040060	0.0383200
84348301	3.4450	27.230	0.009110	0.074580	0.0566100
84358402	5.4380	94.440	0.011490	0.024610	0.0568800
843786	2.2170	27.190	0.007510	0.033450	0.0367200

844359	3.1800	53.910	0.004314	0.013820	0.0225400
84458202	3.8560	50.960	0.008805	0.030290	0.0248800
844981	2.4060	24.320	0.005731	0.035020	0.0355300
84501001	2.0390	23.940	0.007149	0.072170	0.0774300
845636	2.4660	40.510	0.004029	0.009269	0.0110100
84610002	3.5640	54.160	0.005771	0.040610	0.0279100
846226	11.0700	116.200	0.003139	0.082970	0.0889000
846381	2.9030	36.580	0.009769	0.031260	0.0505100
84667401	2.0610	19.210	0.006429	0.059360	0.0550100
84799002	2.8790	32.550	0.005607	0.042400	0.0474100
848406	3.1950	45.400	0.005718	0.011620	0.0199800
84862001	3.8540	54.180	0.007026	0.025010	0.0318800
849014	5.8650	112.400	0.006494	0.018930	0.0339100
8510426	2.0580	23.560	0.008462	0.014600	0.0238700
8510653	1.3830	14.670	0.004097	0.018980	0.0169800
8510824	1.9090	15.700	0.009606	0.014320	0.0198500
8511133	3.3840	44.910	0.006789	0.053280	0.0644600
851509	4.3030	93.990	0.004728	0.012590	0.0171500
852552	5.4550	102.600	0.006048	0.018820	0.0274100
852631	7.2760	111.400	0.008029	0.037990	0.0373200
852763	2.1100	21.050	0.004452	0.030550	0.0268100
852781	5.6320	93.540	0.010750	0.027220	0.0508100
852973	3.4980	43.500	0.005233	0.030570	0.0357600
853201	4.6550	61.100	0.005627	0.030330	0.0340700
853401	5.5740	105.000	0.006248	0.033740	0.0519600
853612	3.4750	41.000	0.005551	0.034140	0.0420500
85382601	3.9990	67.780	0.008268	0.030820	0.0504200
854002	3.5280	68.170	0.005015	0.033180	0.0349700
854039	2.1830	35.030	0.004185	0.028680	0.0266400
854253	3.0080	45.190	0.005776	0.024990	0.0369500
854268	2.6570	24.910	0.005878	0.029950	0.0481500
854941	1.1700	14.160	0.004352	0.004899	0.0134300
855133	8.0770	106.000	0.006883	0.010940	0.0181800
855138	1.5450	18.520	0.005367	0.022390	0.0304900
855167	1.5720	20.530	0.003280	0.011020	0.0139000
855563	1.8220	16.970	0.008064	0.017640	0.0259500
855625	8.8300	104.900	0.006548	0.100600	0.0972300
856106	2.4270	31.330	0.005072	0.021470	0.0218500
85638502	1.3340	14.490	0.003350	0.013840	0.0145200
857010	4.2930	71.560	0.006294	0.039940	0.0555400
85713702	1.0940	8.205	0.008968	0.016460	0.0158800
85715	1.8970	24.250	0.006532	0.023360	0.0290500
857155	1.8480	19.870	0.005488	0.014270	0.0232200

857156	1.7350	20.200	0.004455	0.013820	0.0209500
857343	2.6350	28.470	0.005857	0.009758	0.0116800
857373	1.4490	14.550	0.004477	0.011770	0.0107900
857374	1.5200	17.470	0.007210	0.008380	0.0131100
857392	4.8770	98.810	0.003899	0.029610	0.0281700
857438	2.0970	29.910	0.004675	0.010300	0.0160300
85759902	2.1830	23.470	0.008328	0.008722	0.0134900
857637	4.8370	102.500	0.006458	0.023060	0.0294500
857793	2.7350	40.090	0.003659	0.028550	0.0257200
857810	2.5950	32.960	0.007491	0.008593	0.0006920
858477	1.0460	8.322	0.010110	0.010550	0.0198100
858970	3.3120	34.620	0.007514	0.010990	0.0076650
858981	2.4930	18.390	0.011930	0.031620	0.0300000
858986	5.3730	60.780	0.009407	0.070560	0.0689900
859196	2.6080	23.520	0.008738	0.039380	0.0431200
85922302	2.9270	36.460	0.007781	0.026480	0.0297300
859283	2.4500	35.240	0.006703	0.023100	0.0231500
859464	1.6600	14.200	0.010520	0.017550	0.0171400
859465	1.8310	18.150	0.009282	0.009216	0.0206300
859471	1.8850	17.670	0.009549	0.086060	0.3038000
859487	1.4710	18.330	0.007962	0.005612	0.0158500
859575	5.4860	96.050	0.004444	0.016520	0.0226900
859711	3.1680	25.440	0.017210	0.093680	0.0567100
859717	3.7050	69.470	0.005820	0.056160	0.0425200
859983	1.9570	23.350	0.004717	0.020650	0.0175900
8610175	1.7400	19.680	0.004854	0.018190	0.0182600
8610404	5.0290	79.250	0.010820	0.022030	0.0350000
8610629	2.6520	32.650	0.013400	0.028390	0.0116200
8610637	6.3110	134.800	0.007940	0.058390	0.0465800
8610862	8.6490	116.400	0.010380	0.068350	0.1091000
8610908	1.7780	20.350	0.005293	0.016610	0.0207100
861103	2.0770	24.620	0.010370	0.017060	0.0258600
8611161	1.5350	12.960	0.006794	0.035750	0.0398000
8611555	7.3820	120.000	0.008166	0.056930	0.0573000
8611792	5.8010	67.100	0.007545	0.060500	0.0213400
8612080	1.4410	16.160	0.005969	0.018120	0.0200700
8612399	4.7820	80.600	0.006471	0.016490	0.0280600
86135501	3.3010	38.870	0.009369	0.029830	0.0537100
86135502	3.0550	57.650	0.003872	0.018420	0.0371000
861597	2.2030	20.950	0.007112	0.024930	0.0270300
861598	3.8140	42.760	0.005508	0.044120	0.0443600
861648	2.2790	33.760	0.004868	0.018180	0.0112100
861799	2.0750	29.440	0.009882	0.024440	0.0453100

861853	2.7010	36.350	0.004481	0.010380	0.0135800
862009	2.0990	25.220	0.005884	0.014910	0.0187200
862028	3.7060	47.140	0.009250	0.037150	0.0486700
86208	4.5540	87.870	0.006016	0.034820	0.0423200
86211	2.4100	24.440	0.005433	0.011790	0.0113100
862261	2.1320	20.050	0.011130	0.014630	0.0053080
862485	1.4750	15.750	0.006153	0.013300	0.0169300
862548	2.3760	26.850	0.008005	0.028950	0.0332100
862717	2.8610	43.140	0.005872	0.014880	0.0264700
862722	1.5530	9.833	0.010190	0.010840	0.0000000
862965	1.1830	14.680	0.005080	0.006098	0.0106900
862980	1.5280	11.770	0.009058	0.021960	0.0302900
862989	2.3020	23.130	0.007595	0.022190	0.0288000
863030	2.4100	34.660	0.007162	0.029120	0.0547300
863031	2.1550	20.620	0.008540	0.023100	0.0294500
863270	0.8484	9.227	0.003457	0.010470	0.0116700
86355	10.0500	170.000	0.006515	0.086680	0.1040000
864018	1.5970	16.410	0.009113	0.015570	0.0244300
864033	2.7470	22.870	0.013850	0.029320	0.0272200
86408	2.7110	20.480	0.012910	0.040420	0.0510100
86409	3.3990	29.250	0.005298	0.074460	0.1435000
864292	2.0410	19.910	0.011880	0.037470	0.0459100
864496	1.3540	8.966	0.008261	0.022130	0.0325900
864685	2.0000	24.790	0.007803	0.025070	0.0183500
864726	3.2800	16.940	0.018350	0.067600	0.0926300
864729	2.9890	41.180	0.006985	0.025630	0.0301100
864877	3.5980	58.630	0.008699	0.039760	0.0595000
865128	3.3570	54.040	0.004024	0.008422	0.0229100
865137	1.1030	10.500	0.006040	0.015290	0.0151400
86517	4.8950	90.470	0.008102	0.021010	0.0334200
865423	9.8070	233.000	0.023330	0.098060	0.1278000
865432	1.9280	24.190	0.003818	0.012760	0.0288200
865468	1.2230	14.660	0.005919	0.032700	0.0495700
86561	1.4950	17.910	0.004599	0.009169	0.0091270
866083	1.7520	19.830	0.004088	0.011740	0.0179600
866203	5.2160	81.230	0.004428	0.027310	0.0404000
866458	2.7960	39.840	0.009006	0.041850	0.0320400
866674	2.7650	63.330	0.005033	0.031790	0.0475500
866714	1.9730	15.240	0.006773	0.024560	0.0101800
8670	3.0940	48.310	0.006240	0.014840	0.0281300
86730502	2.8440	43.680	0.004877	0.019520	0.0221900
867387	1.9720	27.940	0.005217	0.015150	0.0167800
867739	3.7660	68.350	0.006001	0.014220	0.0285500

868202	1.4570	19.870	0.007499	0.012020	0.0233200
868223	3.2580	34.370	0.006578	0.013800	0.0266200
868682	1.1430	12.670	0.005133	0.015210	0.0143400
868826	8.4190	101.900	0.010000	0.034800	0.0657700
868871	1.8510	26.330	0.011270	0.034980	0.0218700
868999	1.2180	12.260	0.006040	0.005656	0.0000000
869104	4.5330	74.080	0.006770	0.019380	0.0306700
869218	1.9370	21.380	0.006664	0.017350	0.0115800
869224	1.6890	16.640	0.005324	0.015630	0.0151000
869254	1.8060	17.740	0.006547	0.017810	0.0201800
869476	3.0210	25.030	0.010170	0.047410	0.0278900
869691	2.2810	24.720	0.005427	0.036330	0.0464900
86973701	3.2710	39.430	0.005790	0.048770	0.0530300
86973702	2.1200	21.200	0.005706	0.022970	0.0311400
869931	1.5730	21.470	0.002838	0.015920	0.0178000
871001501	2.8730	34.780	0.007017	0.011420	0.0194900
871001502	1.2430	10.210	0.012430	0.054160	0.0775300
8710441	4.0730	49.850	0.010970	0.095860	0.3960000
87106	1.4290	15.480	0.009019	0.008985	0.0119600
8711002	1.8190	22.790	0.008584	0.020170	0.0304700
8711003	1.4840	16.510	0.005518	0.015620	0.0199400
8711202	5.5400	93.910	0.009037	0.049540	0.0520600
8711216	3.4790	46.610	0.003443	0.026610	0.0305600
871122	1.1710	13.250	0.005528	0.009789	0.0083420
871149	1.8080	18.540	0.006142	0.006134	0.0018350
8711561	3.9260	38.340	0.009433	0.024050	0.0416700
8711803	6.9710	119.300	0.009406	0.030550	0.0434400
871201	4.7920	97.070	0.004057	0.022770	0.0402900
8712064	1.9550	21.550	0.011340	0.031750	0.0312500
8712289	4.6030	97.850	0.004910	0.025440	0.0282200
8712291	1.2860	16.640	0.003634	0.007983	0.0082680
87127	1.1260	11.480	0.007809	0.009816	0.0109900
8712729	4.1290	67.340	0.006123	0.024700	0.0262600
8712766	7.3370	122.300	0.006174	0.036340	0.0464400
8712853	1.8930	24.280	0.005080	0.013700	0.0072760
87139402	1.6700	17.430	0.008045	0.011800	0.0168300
87163	3.1420	43.400	0.006003	0.010630	0.0215100
87164	2.8050	44.640	0.005393	0.023210	0.0430300
871641	1.3770	19.080	0.014960	0.021210	0.0145300
871642	2.1550	21.980	0.008713	0.010170	0.0000000
872113	1.4350	11.360	0.009172	0.008007	0.0000000
872608	3.1320	27.480	0.012860	0.088080	0.1197000
87281702	2.4820	31.590	0.006627	0.040940	0.0537100

873357	1.1010	14.340	0.003418	0.002252	0.0015950
873586	1.7780	21.790	0.008534	0.006364	0.0061800
873592	5.8200	128.700	0.004631	0.025370	0.0310900
873593	4.4140	81.460	0.004253	0.047590	0.0387200
873701	2.4060	40.980	0.004626	0.022630	0.0195400
873843	1.9020	22.770	0.007356	0.037280	0.0591500
873885	1.3440	19.530	0.003290	0.013950	0.0177400
874158	2.6800	26.430	0.014390	0.012000	0.0015970
874217	1.8170	28.920	0.002866	0.009181	0.0141200
874373	1.7420	17.860	0.006905	0.008704	0.0197800
874662	1.0110	14.470	0.007831	0.008776	0.0155600
874839	1.6870	18.320	0.005996	0.022120	0.0211700
874858	2.1120	31.720	0.007970	0.135400	0.1166000
875093	5.1180	53.650	0.004571	0.017900	0.0217600
875099	2.2300	21.690	0.001713	0.006736	0.0000000
875263	2.6420	34.440	0.009098	0.038450	0.0376300
87556202	3.5910	25.200	0.008081	0.051220	0.0555100
875878	1.4930	15.750	0.005298	0.015870	0.0232100
875938	4.9060	49.700	0.013800	0.033480	0.0466500
877159	4.3120	76.360	0.005530	0.052960	0.0611000
877486	3.8330	54.220	0.005524	0.036980	0.0270600
877500	1.4460	19.420	0.004044	0.015970	0.0200000
877501	2.3080	27.240	0.007514	0.017790	0.0140100
877989	3.0880	40.730	0.006090	0.025690	0.0271300
878796	4.6670	83.160	0.009327	0.051210	0.0895800
87880	3.9090	52.720	0.008824	0.031080	0.0311200
87930	2.4970	30.290	0.006953	0.019110	0.0270100
879523	1.9740	26.440	0.005472	0.019190	0.0203900
879804	1.5170	12.330	0.009719	0.012490	0.0079750
879830	4.1060	68.460	0.005038	0.015030	0.0194600
8810158	1.4910	15.090	0.005251	0.030410	0.0252600
8810436	1.5250	20.000	0.004291	0.012360	0.0184100
881046502	7.0290	111.700	0.008124	0.036110	0.0548900
8810528	1.4440	17.120	0.005517	0.017270	0.0204500
8810703	21.9800	525.600	0.013450	0.027720	0.0638900
881094802	3.7670	58.530	0.031130	0.085550	0.1438000
8810955	3.5340	31.000	0.010880	0.037100	0.0368800
8810987	1.9330	22.690	0.005960	0.034380	0.0390900
8811523	2.0870	21.460	0.008872	0.041920	0.0594600
8811779	2.7470	22.790	0.004680	0.031200	0.0577400
8811842	6.4870	124.400	0.006804	0.031690	0.0344600
88119002	4.7220	109.900	0.005539	0.026440	0.0266400
8812816	1.3910	17.400	0.004133	0.016950	0.0165200

8812818	2.0110	21.030	0.005851	0.023140	0.0254400
8812844	1.6410	15.050	0.007899	0.014000	0.0085340
8812877	2.2440	32.190	0.004766	0.023740	0.0238400
8813129	2.0440	24.680	0.006032	0.011040	0.0225900
88143502	3.7630	48.290	0.007089	0.014280	0.0236000
88147101	1.2080	11.860	0.006513	0.008061	0.0028170
88147102	2.2760	19.880	0.004119	0.032070	0.0364400
88147202	1.4450	18.510	0.005169	0.022940	0.0301600
881861	2.2570	25.130	0.006983	0.038580	0.0468300
881972	2.1530	31.980	0.005532	0.020080	0.0305500
88199202	1.0590	8.605	0.003653	0.016470	0.0163300
88203002	1.4890	15.460	0.004359	0.006813	0.0032230
88206102	3.7670	70.010	0.005020	0.020620	0.0345700
882488	1.2150	12.640	0.011640	0.010400	0.0118600
88249602	1.6670	22.070	0.007389	0.013830	0.0073020
88299702	7.2470	155.800	0.006428	0.028630	0.0449700
883263	5.1440	83.500	0.007959	0.031330	0.0425700
883270	2.1050	29.960	0.006307	0.028450	0.0385000
88330202	3.0020	49.000	0.004860	0.027850	0.0260200
88350402	1.9960	27.190	0.006470	0.012480	0.0181000
883539	0.7570	9.006	0.003265	0.004930	0.0064930
883852	2.3690	16.390	0.006663	0.059140	0.0888000
88411702	2.8290	39.930	0.004351	0.026670	0.0337100
884180	4.0370	60.410	0.010610	0.032520	0.0391500
884437	2.5170	23.220	0.016040	0.013860	0.0186500
884448	0.8730	13.560	0.006261	0.015690	0.0307900
884626	2.3930	16.350	0.005501	0.055920	0.0815800
88466802	1.4970	16.640	0.007189	0.010350	0.0108100
884689	1.6860	18.620	0.006662	0.012280	0.0210500
884948	6.3720	137.900	0.005283	0.039080	0.0951800
88518501	2.6840	26.990	0.006380	0.010650	0.0124500
885429	4.1150	92.810	0.008482	0.050570	0.0680000
8860702	2.1930	33.630	0.004757	0.015030	0.0233200
886226	3.7970	71.000	0.004649	0.018000	0.0274900
886452	2.5630	35.740	0.006351	0.026790	0.0311900
88649001	7.1580	106.400	0.006356	0.047650	0.0386300
886776	4.0610	59.460	0.010150	0.045880	0.0498300
887181	10.1200	138.500	0.012360	0.059950	0.0823200
88725602	1.9030	23.020	0.005345	0.025560	0.0288900
887549	2.5870	52.340	0.005043	0.015780	0.0211700
888264	2.5770	44.410	0.005726	0.011060	0.0124600
888570	6.1460	90.940	0.006717	0.059810	0.0463800
889403	1.5340	22.180	0.002826	0.009105	0.0131100

889719	2.8190	45.420	0.004493	0.012060	0.0204800
88995002	7.7490	199.700	0.004551	0.014780	0.0214300
8910251	3.4300	27.100	0.007470	0.035810	0.0335400
8910499	2.5910	26.760	0.005436	0.024060	0.0309900
8910506	1.5460	18.240	0.005518	0.021780	0.0258900
8910720	2.2300	20.740	0.008902	0.047850	0.0733900
8910721	0.8439	10.770	0.003492	0.003710	0.0048260
8910748	1.1640	13.170	0.006472	0.011220	0.0128200
8910988	8.8670	156.800	0.005687	0.049600	0.0632900
8910996	1.7500	16.390	0.013800	0.010670	0.0083470
8911163	2.7650	45.810	0.005444	0.011690	0.0162200
8911164	4.0210	48.840	0.014180	0.014890	0.0126700
8911230	1.5650	17.090	0.008426	0.008998	0.0014870
8911670	2.3630	36.740	0.007571	0.011140	0.0262300
8911800	1.6830	22.220	0.003741	0.005274	0.0106500
8911834	1.8300	19.410	0.004235	0.015410	0.0145700
8912049	4.3210	69.650	0.007392	0.024490	0.0398800
8912055	3.7170	37.830	0.008034	0.014420	0.0151400
89122	2.9030	53.160	0.005654	0.021990	0.0305900
8912280	2.4640	28.090	0.004563	0.034810	0.0387200
8912284	2.3470	23.290	0.006418	0.039610	0.0792700
8912521	1.7210	22.450	0.006383	0.008008	0.0018600
8912909	3.1980	21.910	0.006719	0.051560	0.0438700
8913	1.1150	12.680	0.004731	0.013450	0.0165200
8913049	2.8770	34.680	0.015740	0.082620	0.0809900
89143601	1.9540	17.490	0.006538	0.013950	0.0137600
89143602	4.3600	77.110	0.007762	0.106400	0.0996000
8915	2.1710	24.870	0.005332	0.021150	0.0153600
891670	1.2310	17.670	0.008725	0.020030	0.0233500
891703	1.2340	13.880	0.007595	0.015000	0.0141200
891716	1.3400	13.380	0.006064	0.011800	0.0065640
891923	1.4790	17.740	0.004348	0.008153	0.0042720
891936	1.2670	11.090	0.003478	0.012210	0.0107200
892189	4.1380	49.110	0.005596	0.010050	0.0127200
892214	1.6610	20.560	0.003169	0.013770	0.0107900
892399	2.2890	20.560	0.010170	0.014430	0.0186100
892438	7.2370	133.000	0.006056	0.032030	0.0563800
892604	2.5790	28.320	0.006530	0.033690	0.0471200
89263202	7.8040	130.800	0.007964	0.047320	0.0764900
892657	1.0350	10.080	0.008875	0.009362	0.0180800
89296	2.4750	22.930	0.006652	0.026520	0.0222100
893061	1.9610	18.210	0.006122	0.023370	0.0159600
89344	1.2040	15.500	0.003632	0.007861	0.0011280

89346	1.1440	9.789	0.007389	0.004883	0.0036810
893526	1.5090	20.390	0.003338	0.003746	0.0020300
893548	2.5670	33.010	0.004148	0.004711	0.0028310
893783	1.1090	11.280	0.006064	0.009110	0.0104200
89382601	1.9540	28.900	0.005031	0.006021	0.0053250
89382602	2.3460	25.180	0.006494	0.027680	0.0313700
893988	1.1070	9.438	0.004124	0.013400	0.0100300
894047	2.2220	17.810	0.020750	0.014030	0.0000000
894089	1.0470	12.690	0.004928	0.003012	0.0026200
894090	1.4380	15.820	0.005343	0.005767	0.0112300
894326	2.5470	48.900	0.004821	0.016590	0.0240800
894329	3.7690	24.200	0.009845	0.065900	0.1027000
894335	2.4870	31.160	0.007357	0.010790	0.0099590
894604	1.5970	22.680	0.010490	0.042650	0.0400400
894618	3.8680	74.850	0.004536	0.013760	0.0264500
894855	1.6140	16.570	0.005910	0.020160	0.0190200
895100	4.0120	69.060	0.005485	0.024310	0.0319000
89511501	1.9590	19.010	0.005403	0.014180	0.0105100
89511502	1.5660	17.610	0.006809	0.009514	0.0132900
89524	1.5580	23.920	0.006692	0.011320	0.0057170
895299	1.4660	16.970	0.004729	0.006887	0.0011840
8953902	3.2700	44.410	0.006697	0.020830	0.0324800
895633	2.9610	57.720	0.010560	0.037560	0.0583900
896839	2.6290	33.270	0.005839	0.032450	0.0371500
896864	2.4650	20.650	0.005727	0.032550	0.0439300
897132	1.9590	19.620	0.012890	0.011040	0.0032970
897137	1.5290	15.070	0.005617	0.007124	0.0009737
897374	1.1990	13.240	0.007881	0.008432	0.0070040
89742801	6.0760	87.170	0.006455	0.017970	0.0450200
897604	0.9219	14.410	0.005231	0.023050	0.0311300
897630	4.3690	88.250	0.007548	0.038970	0.0391400
897880	1.7780	16.850	0.007803	0.014490	0.0169000
89812	6.4620	164.100	0.006292	0.019710	0.0358200
89813	2.6770	32.140	0.004577	0.030530	0.0384000
898143	1.4290	12.070	0.005954	0.034710	0.0502800
89827	1.3550	10.800	0.007416	0.018770	0.0275800
898431	5.1730	67.660	0.004756	0.033680	0.0434500
89864002	2.3550	24.530	0.009536	0.010970	0.0165100
898677	2.3940	19.330	0.017360	0.046710	0.0261100
898678	1.5590	18.020	0.007180	0.010960	0.0058320
89869	2.5370	29.060	0.004732	0.015060	0.0185500
898690	1.0900	12.250	0.009191	0.008548	0.0094000
899147	2.4550	26.650	0.005800	0.024170	0.0078160

899187	2.2250	26.030	0.006583	0.006991	0.0059490
899667	3.4770	51.220	0.009329	0.065590	0.0995300
899987	7.2220	153.100	0.006369	0.042430	0.0426600
9010018	4.1740	63.370	0.010520	0.024310	0.0491200
901011	3.3300	28.840	0.005541	0.033870	0.0450500
9010258	3.2120	27.490	0.009853	0.042350	0.0627100
9010259	2.5900	21.570	0.007807	0.039320	0.0511200
901028	1.7370	20.740	0.005638	0.007939	0.0052540
9010333	4.2770	30.180	0.010930	0.028990	0.0321400
901034301	3.2670	30.480	0.006836	0.008982	0.0234800
901034302	2.3290	28.300	0.005783	0.004693	0.0007929
901041	2.0280	20.980	0.005498	0.020450	0.0179500
9010598	1.5350	17.260	0.005608	0.016460	0.0152900
9010872	2.3440	33.580	0.007257	0.018050	0.0183200
9010877	1.0360	13.220	0.004394	0.012500	0.0145100
901088	4.2180	72.440	0.006208	0.019060	0.0237500
9011494	7.1280	103.600	0.008439	0.046740	0.0590400
9011495	1.8740	18.570	0.005833	0.013880	0.0200000
9011971	7.7330	224.100	0.005568	0.011120	0.0209600
9012000	7.5610	130.200	0.003978	0.028210	0.0357600
9012315	2.9720	45.500	0.005635	0.039170	0.0607200
9012568	1.3380	17.720	0.005012	0.014850	0.0155100
9012795	2.4070	39.060	0.004426	0.026750	0.0343700
901288	4.1190	77.020	0.006211	0.018950	0.0268100
9013005	1.3720	14.000	0.004230	0.015870	0.0116900
901303	1.3490	14.910	0.004510	0.018120	0.0195100
901315	2.3630	7.228	0.008499	0.076430	0.1535000
9013579	1.4000	14.910	0.004942	0.012030	0.0075080
9013594	1.1010	11.350	0.005212	0.029840	0.0244300
9013838	1.7190	13.990	0.007405	0.045490	0.0458800
901549	1.8090	16.040	0.006635	0.017770	0.0210100
901836	1.2810	11.680	0.005296	0.019030	0.0172300
90250	1.7780	9.549	0.005042	0.045600	0.0430500
90251	2.1170	19.200	0.006715	0.037050	0.0475700
902727	1.5920	15.260	0.004271	0.020730	0.0282800
90291	2.9140	33.010	0.008312	0.017420	0.0338900
902975	2.0970	19.960	0.004405	0.030260	0.0434400
902976	1.7090	23.120	0.003728	0.014150	0.0198800
903011	2.5690	22.970	0.010380	0.066690	0.0947200
90312	5.3830	70.100	0.011240	0.040970	0.0746900
90317302	1.3480	11.880	0.005682	0.013650	0.0084960
903483	3.1670	28.850	0.015820	0.019660	0.0000000
903507	4.6750	66.910	0.007269	0.029280	0.0497200

903516	4.1580	80.990	0.005215	0.037260	0.0471800
903554	1.8690	22.220	0.008146	0.016310	0.0184300
903811	1.2370	12.670	0.005371	0.012730	0.0113200
90401601	1.5130	19.290	0.005442	0.019570	0.0330400
90401602	2.6680	30.570	0.005421	0.034770	0.0454500
904302	1.2630	12.980	0.004259	0.014690	0.0194000
904357	2.2250	25.060	0.005463	0.019640	0.0207900
90439701	3.1230	41.510	0.007159	0.037180	0.0616500
904647	1.6490	18.950	0.006175	0.012040	0.0137600
904689	2.3970	20.210	0.003629	0.037130	0.0345200
9047	0.9975	11.360	0.002887	0.012850	0.0161300
904969	2.6020	30.150	0.007702	0.008491	0.0130700
904971	3.0180	25.780	0.009519	0.021340	0.0199000
905189	1.7290	21.830	0.003958	0.012460	0.0183100
905190	2.5520	41.240	0.006011	0.044800	0.0517500
90524101	3.0610	49.810	0.007231	0.027720	0.0250900
905501	2.0790	25.790	0.005888	0.023100	0.0205900
905502	1.3590	13.660	0.005391	0.009947	0.0116300
905520	1.3420	13.540	0.005158	0.009355	0.0105600
905539	1.1740	6.802	0.005515	0.026740	0.0373500
905557	2.3100	28.510	0.004449	0.028080	0.0331200
905680	3.0430	45.380	0.006831	0.014270	0.0248900
905686	1.9300	19.530	0.009895	0.030530	0.0163000
905978	2.7590	25.170	0.014740	0.016740	0.0136700
90602302	9.4240	176.500	0.008198	0.038890	0.0449300
906024	1.5270	17.370	0.006131	0.012630	0.0090750
906290	1.9680	18.990	0.006908	0.009442	0.0069720
906539	2.2060	20.300	0.007278	0.020470	0.0444700
906564	4.7950	49.450	0.009976	0.052440	0.0527800
906616	1.6670	15.890	0.005884	0.020050	0.0263100
906878	1.8040	19.360	0.003980	0.028090	0.0366900
907145	4.6070	43.520	0.013070	0.018850	0.0060210
907367	1.1840	11.600	0.005724	0.005697	0.0020740
907409	2.5640	20.770	0.007364	0.038670	0.0526300
90745	2.2400	20.200	0.006543	0.021480	0.0299100
90769601	0.9680	9.704	0.005883	0.006263	0.0093980
90769602	2.1090	23.240	0.007337	0.011740	0.0053830
907914	3.4660	24.190	0.006965	0.062130	0.0792600
907915	2.2040	15.430	0.010000	0.032950	0.0486100
908194	3.0080	52.490	0.009087	0.027150	0.0554600
908445	4.4930	103.900	0.008074	0.040880	0.0532100
908469	1.6120	23.920	0.005756	0.016650	0.0146100
908489	1.6020	18.850	0.005314	0.017910	0.0218500

908916	2.5970	26.500	0.005910	0.013620	0.0070660
909220	2.6440	32.740	0.007976	0.012950	0.0160800
909231	2.3310	29.630	0.005836	0.010950	0.0058120
909410	1.6060	19.250	0.004837	0.009238	0.0092130
909411	2.8060	18.150	0.008565	0.046380	0.0643000
909445	3.2830	58.380	0.008109	0.043080	0.0494200
90944601	2.2350	29.340	0.006432	0.011560	0.0077410
909777	1.2770	13.120	0.010720	0.013310	0.0199300
9110127	1.9210	35.770	0.004117	0.015600	0.0297500
9110720	1.8650	19.390	0.008320	0.020250	0.0233400
9110732	2.8730	43.950	0.004714	0.020150	0.0369700
9110944	1.4820	19.750	0.004796	0.011710	0.0175800
911150	1.9940	23.040	0.004147	0.020480	0.0337900
911157302	4.5420	81.890	0.005467	0.020750	0.0318500
9111596	1.9550	20.240	0.006854	0.060630	0.0666300
9111805	2.9160	56.180	0.011900	0.019290	0.0490700
9111843	1.5160	13.860	0.007334	0.025890	0.0294100
911201	2.1430	25.700	0.006133	0.012510	0.0161500
911202	1.1160	13.320	0.003888	0.008539	0.0125600
9112085	2.2870	28.930	0.005841	0.012460	0.0079360
9112366	2.1500	23.130	0.009861	0.024180	0.0427500
9112367	1.3140	17.580	0.005768	0.008082	0.0151000
9112594	1.6570	21.190	0.006054	0.008974	0.0056810
9112712	1.2430	11.280	0.006588	0.012700	0.0145000
911296201	6.0510	115.200	0.008740	0.022190	0.0272100
911296202	18.6500	542.200	0.007650	0.053740	0.0805500
9113156	1.7270	20.520	0.005356	0.016790	0.0197100
911320501	1.3030	12.890	0.006709	0.017010	0.0208000
911320502	1.2360	16.890	0.005969	0.014930	0.0156400
9113239	3.3690	23.810	0.004929	0.066570	0.0768300
9113455	2.3120	27.400	0.007295	0.031790	0.0461500
9113514	2.2750	20.980	0.010980	0.012570	0.0103100
9113538	5.8010	104.900	0.006766	0.070250	0.0659100
911366	3.0270	27.850	0.014590	0.032060	0.0496100
9113778	2.5690	22.730	0.007501	0.019890	0.0271400
9113816	4.0990	44.960	0.007517	0.015550	0.0146500
911384	1.8260	23.310	0.003271	0.017700	0.0231000
9113846	2.8840	35.130	0.007339	0.008243	0.0000000
911391	1.3010	9.597	0.004474	0.030930	0.0275700
911408	1.1950	11.640	0.004873	0.017960	0.0331800
911654	2.7490	31.010	0.004107	0.032880	0.0282100
911673	1.3920	14.030	0.003308	0.013150	0.0099040
911685	1.5670	14.340	0.004957	0.021140	0.0415600

911916	3.0700	33.120	0.009197	0.054700	0.0807900
912193	1.6780	16.260	0.004911	0.016660	0.0139700
91227	2.0560	28.410	0.003704	0.010820	0.0153000
912519	1.1020	12.840	0.004450	0.014520	0.0133400
912558	1.5640	20.640	0.003245	0.008186	0.0169800
912600	1.1430	13.870	0.006034	0.018200	0.0333600
913063	5.0040	30.190	0.007234	0.074710	0.1114000
913102	1.4710	19.980	0.003535	0.013930	0.0180000
913505	3.6310	67.740	0.005288	0.028330	0.0425600
913512	2.5540	27.570	0.008998	0.012920	0.0185100
913535	1.7750	22.950	0.002667	0.014460	0.0142300
91376701	1.5770	18.040	0.005096	0.012050	0.0094100
91376702	3.1630	50.950	0.004369	0.008274	0.0115300
914062	5.3530	89.740	0.007997	0.027000	0.0373700
914101	2.1080	24.600	0.010390	0.010030	0.0064160
914102	2.3260	26.070	0.007802	0.020520	0.0134100
914333	1.5960	21.840	0.005415	0.013710	0.0215300
914366	1.6960	18.400	0.005704	0.025020	0.0263600
914580	1.2530	11.910	0.003796	0.013710	0.0134600
914769	4.8510	95.770	0.007974	0.032140	0.0443500
91485	4.2060	75.090	0.006666	0.027910	0.0406200
914862	2.3040	34.840	0.004123	0.018190	0.0199600
91504	2.9740	39.050	0.009680	0.038560	0.0347600
91505	1.5660	18.490	0.009702	0.015670	0.0257500
915143	9.6350	180.200	0.005753	0.033560	0.0397600
915186	3.0140	20.040	0.009783	0.045420	0.0348300
915276	1.7870	17.670	0.021770	0.048880	0.0518900
91544001	0.9857	12.580	0.006272	0.021980	0.0396600
91544002	1.3180	12.300	0.012620	0.023480	0.0180000
915452	1.1460	20.670	0.007394	0.012030	0.0247000
915460	2.9370	32.520	0.009538	0.049400	0.0601900
91550	1.3450	13.040	0.006982	0.039160	0.0401700
915664	1.6770	20.720	0.006708	0.011970	0.0148200
915691	3.0930	33.670	0.005414	0.022650	0.0345200
915940	2.5610	37.110	0.004953	0.018120	0.0303500
91594602	2.6300	38.490	0.004952	0.016300	0.0296700
916221	1.4910	18.190	0.008577	0.016410	0.0209900
916799	3.2180	67.360	0.006176	0.018770	0.0291300
916838	3.6540	59.700	0.005089	0.023030	0.0305200
917062	3.1760	34.370	0.005273	0.023290	0.0140500
917080	2.4950	28.620	0.007509	0.015610	0.0197700
917092	2.3880	19.630	0.015460	0.025400	0.0219700
91762702	7.0500	139.900	0.004989	0.032120	0.0357100

91789	0.9812	9.332	0.004200	0.005900	0.0038460
917896	2.2840	26.450	0.006739	0.022510	0.0208600
917897	1.9760	15.240	0.008732	0.020420	0.0106200
91805	1.0690	7.254	0.007897	0.017620	0.0180100
91813701	1.4430	16.070	0.004413	0.014430	0.0150900
91813702	0.7714	8.955	0.003681	0.009169	0.0087320
918192	4.0910	44.740	0.010040	0.032470	0.0476300
918465	1.7140	18.540	0.007327	0.011530	0.0179800
91858	3.1490	30.660	0.006587	0.018150	0.0173700
91903901	1.3930	15.340	0.005251	0.017270	0.0184000
91903902	1.3730	17.250	0.003828	0.007228	0.0070780
91930402	5.1680	100.400	0.004938	0.030890	0.0409300
919537	1.1650	10.090	0.009501	0.033780	0.0440100
919555	4.7060	87.780	0.004578	0.026160	0.0400500
91979701	1.8950	18.540	0.006113	0.025830	0.0464500
919812	2.1580	20.950	0.012880	0.034950	0.0186500
921092	2.4920	19.140	0.012660	0.009692	0.0000000
921362	1.4450	11.730	0.015470	0.064570	0.0925200
921385	1.6280	20.860	0.012150	0.041120	0.0555300
921386	2.6150	23.110	0.007138	0.046530	0.0382900
921644	2.1770	27.410	0.004775	0.011720	0.0194700
922296	1.5390	17.850	0.004973	0.013720	0.0149800
922297	2.0760	23.120	0.006298	0.021720	0.0261500
922576	2.0660	31.240	0.005868	0.020990	0.0202100
922577	1.3560	12.970	0.007086	0.007247	0.0101200
922840	0.9887	7.326	0.010270	0.030840	0.0261300
923169	2.0540	18.240	0.007440	0.011230	0.0233700
923465	3.5640	33.000	0.008263	0.018700	0.0127700
923748	2.1150	20.670	0.009579	0.011040	0.0000000
923780	1.9940	17.850	0.003495	0.030510	0.0344500
924084	1.4770	18.760	0.008835	0.012330	0.0132800
924342	2.1210	17.860	0.010940	0.018340	0.0399600
924632	1.5020	16.830	0.008412	0.021530	0.0389800
924934	1.4370	14.460	0.012050	0.027360	0.0480400
924964	1.6480	16.800	0.012910	0.022220	0.0041740
925236	3.6180	29.110	0.011590	0.011240	0.0000000
925277	2.2240	19.540	0.004242	0.046390	0.0657800
925291	1.9360	16.970	0.008200	0.029820	0.0573800
925292	2.8880	29.840	0.007256	0.026780	0.0207100
925311	2.0410	22.810	0.007594	0.008878	0.0000000
925622	2.3620	22.650	0.004625	0.048440	0.0735900
926125	8.7580	118.800	0.006399	0.043100	0.0784500
926424	7.6730	158.700	0.010300	0.028910	0.0519800

926682	5.2030	99.040	0.005769	0.024230	0.0395000
926954	3.4250	48.550	0.005903	0.037310	0.0473000
927241	5.7720	86.220	0.006522	0.061580	0.0711700
92751	2.5480	19.150	0.007189	0.004660	0.0000000

	concave.points_se	symmetry_se	fractal_dimension_se	radius_worst
842302	0.015870	0.030030	0.0061930	25.380
842517	0.013400	0.013890	0.0035320	24.990
84300903	0.020580	0.022500	0.0045710	23.570
84348301	0.018670	0.059630	0.0092080	14.910
84358402	0.018850	0.017560	0.0051150	22.540
843786	0.011370	0.021650	0.0050820	15.470
844359	0.010390	0.013690	0.0021790	22.880
84458202	0.014480	0.014860	0.0054120	17.060
844981	0.012260	0.021430	0.0037490	15.490
84501001	0.014320	0.017890	0.0100800	15.090
845636	0.007591	0.014600	0.0030420	19.190
84610002	0.012820	0.020080	0.0041440	20.420
846226	0.040900	0.044840	0.0128400	20.960
846381	0.019920	0.029810	0.0030020	16.840
84667401	0.016280	0.019610	0.0080930	15.030
84799002	0.010900	0.018570	0.0054660	17.460
848406	0.011090	0.014100	0.0020850	19.070
84862001	0.012970	0.016890	0.0041420	20.960
849014	0.015210	0.013560	0.0019970	27.320
8510426	0.013150	0.019800	0.0023000	15.110
8510653	0.006490	0.016780	0.0024250	14.500
8510824	0.014210	0.020270	0.0029680	10.230
8511133	0.022520	0.036720	0.0043940	18.070
851509	0.010380	0.010830	0.0019870	29.170
852552	0.011300	0.014680	0.0028010	26.460
852631	0.023970	0.023080	0.0074440	22.250
852763	0.013520	0.014540	0.0037110	17.620
852781	0.019110	0.022930	0.0042170	21.310
852973	0.010830	0.017680	0.0029670	20.270
853201	0.013540	0.019250	0.0037420	20.010
853401	0.011580	0.020070	0.0045600	23.150
853612	0.010440	0.022730	0.0056670	16.820
85382601	0.011120	0.021020	0.0038540	20.880
854002	0.009643	0.015430	0.0038960	24.150
854039	0.009067	0.017030	0.0038170	20.210
854253	0.011950	0.027890	0.0026650	20.010
854268	0.011610	0.020280	0.0040220	15.890
854941	0.011640	0.026710	0.0017770	13.300

855133	0.019170	0.007882	0.0017540	14.990
855138	0.012620	0.013770	0.0031870	15.530
855167	0.006881	0.013800	0.0012860	15.930
855563	0.010370	0.013570	0.0030400	12.840
855625	0.026380	0.053330	0.0076460	24.090
856106	0.009560	0.017190	0.0033170	17.380
85638502	0.006853	0.011130	0.0017200	16.230
857010	0.016950	0.024280	0.0035350	22.820
85713702	0.005917	0.025740	0.0025820	8.964
85715	0.012150	0.017430	0.0036430	15.670
857155	0.005660	0.014280	0.0024220	13.760
857156	0.011840	0.016410	0.0019560	15.150
857343	0.007445	0.024060	0.0017690	12.980
857373	0.007956	0.013250	0.0025510	14.670
857374	0.008000	0.019960	0.0026350	13.100
857392	0.009222	0.026740	0.0051260	20.600
857438	0.009222	0.010950	0.0016290	18.100
85759902	0.008670	0.032180	0.0023860	12.840
857637	0.015380	0.018520	0.0026080	26.140
857793	0.012720	0.018170	0.0041080	17.870
857810	0.004167	0.021900	0.0029900	14.230
858477	0.005742	0.020900	0.0027880	9.507
858970	0.008193	0.041830	0.0059530	11.020
858981	0.009259	0.033570	0.0030480	9.565
858986	0.018480	0.017000	0.0061130	17.670
859196	0.015600	0.041920	0.0058220	10.010
85922302	0.012900	0.016350	0.0036010	17.090
859283	0.011840	0.019000	0.0032240	17.310
859464	0.009333	0.022790	0.0042370	10.410
859465	0.008965	0.021830	0.0021460	12.330
859471	0.033220	0.041970	0.0095590	10.310
859487	0.008662	0.022540	0.0019060	13.460
859575	0.013700	0.013860	0.0016980	24.860
859711	0.017660	0.025410	0.0219300	9.733
859717	0.011270	0.015270	0.0062990	23.320
859983	0.009206	0.012200	0.0031300	16.570
8610175	0.007965	0.013860	0.0023040	14.110
8610404	0.018090	0.015500	0.0019480	19.770
8610629	0.008239	0.025720	0.0061640	14.080
8610637	0.020700	0.025910	0.0070540	22.390
8610862	0.025930	0.078950	0.0059870	23.370
8610908	0.008179	0.017480	0.0028480	14.240
861103	0.007506	0.018160	0.0039760	13.110

8611161	0.013830	0.021340	0.0046030	15.530
8611555	0.020300	0.010650	0.0058930	30.000
8611792	0.018430	0.030560	0.0103900	20.330
8612080	0.007027	0.019720	0.0026070	13.670
8612399	0.014200	0.023700	0.0037550	22.930
86135501	0.017610	0.024180	0.0032490	16.210
86135502	0.012000	0.019640	0.0033370	24.560
861597	0.012930	0.019580	0.0044630	13.830
861598	0.016230	0.024270	0.0048410	16.340
861648	0.008606	0.020850	0.0028930	16.110
861799	0.017630	0.024710	0.0021420	16.430
861853	0.010820	0.010690	0.0014350	16.360
862009	0.009366	0.018840	0.0018170	15.100
862028	0.018510	0.014980	0.0035200	18.230
86208	0.012690	0.026570	0.0044110	24.220
86211	0.015190	0.022200	0.0034080	12.830
862261	0.005250	0.018010	0.0056670	10.920
862485	0.006884	0.016510	0.0025510	13.060
862548	0.014240	0.014620	0.0044520	16.330
862717	0.009921	0.014650	0.0023550	16.990
862722	0.000000	0.026590	0.0041000	7.930
862965	0.006797	0.014470	0.0015320	13.340
862980	0.011120	0.016090	0.0035700	10.760
862989	0.008614	0.027100	0.0034510	11.540
863030	0.013880	0.015470	0.0070980	16.310
863031	0.013980	0.015650	0.0038400	13.140
863270	0.005558	0.012510	0.0013560	13.290
86355	0.024800	0.031120	0.0050370	28.400
864018	0.006435	0.015680	0.0024770	13.010
864033	0.010230	0.032810	0.0046380	11.050
86408	0.022950	0.021440	0.0058910	13.330
86409	0.022920	0.025660	0.0129800	15.300
864292	0.015440	0.022870	0.0067920	11.160
864496	0.010400	0.017080	0.0038060	9.628
864685	0.007711	0.012780	0.0038560	13.670
864726	0.023080	0.023840	0.0056010	9.414
864729	0.012710	0.016020	0.0038840	18.810
864877	0.013900	0.014950	0.0059840	20.190
865128	0.009863	0.050140	0.0019020	20.580
865137	0.006460	0.013440	0.0022060	12.820
86517	0.016010	0.020450	0.0045700	22.250
865423	0.018220	0.045470	0.0098750	26.020
865432	0.012000	0.019100	0.0028080	15.700

865468	0.010380	0.012080	0.0040760	14.260
86561	0.004814	0.012470	0.0017080	15.490
866083	0.006880	0.013230	0.0014650	16.890
866203	0.013610	0.020300	0.0026860	22.320
866458	0.022580	0.023530	0.0049840	16.110
866674	0.010430	0.015780	0.0032240	22.630
866714	0.008094	0.026620	0.0041430	13.340
8670	0.010930	0.013970	0.0024610	19.260
86730502	0.009231	0.015350	0.0023730	19.470
867387	0.012680	0.016690	0.0023300	17.500
867739	0.009148	0.014920	0.0022050	22.520
868202	0.008920	0.016470	0.0026290	14.490
868223	0.013070	0.013590	0.0037070	13.330
868682	0.008602	0.015010	0.0015880	12.320
868826	0.028010	0.051680	0.0028870	18.550
868871	0.019650	0.015800	0.0034420	11.920
868999	0.000000	0.022770	0.0032200	10.620
869104	0.011670	0.018750	0.0034340	19.920
869218	0.009520	0.022820	0.0035260	12.780
869224	0.007584	0.021040	0.0018870	14.480
869254	0.005612	0.016710	0.0023600	11.950
869476	0.011100	0.031270	0.0094230	13.150
869691	0.018430	0.056280	0.0046350	13.740
86973701	0.015270	0.033560	0.0093680	16.250
86973702	0.014930	0.014540	0.0025280	15.850
869931	0.005828	0.013290	0.0019760	15.340
871001501	0.011530	0.029510	0.0015330	14.160
871001502	0.010220	0.023090	0.0117800	9.092
8710441	0.052790	0.035460	0.0298400	11.020
87106	0.008232	0.023880	0.0016190	11.990
8711002	0.009536	0.027690	0.0034790	14.770
8711003	0.007924	0.017990	0.0024840	13.590
8711202	0.018410	0.017780	0.0049680	20.470
8711216	0.011100	0.015200	0.0015190	18.220
871122	0.006273	0.014650	0.0025300	13.140
871149	0.003576	0.016370	0.0026650	12.360
8711561	0.011520	0.033970	0.0050610	13.320
8711803	0.027940	0.031560	0.0033620	22.030
871201	0.013030	0.016860	0.0033180	26.730
8712064	0.011350	0.018790	0.0053480	13.580
8712289	0.016230	0.019560	0.0037400	28.010
8712291	0.006432	0.019240	0.0015200	15.980
87127	0.005344	0.012540	0.0021200	11.600

8712729	0.016040	0.020910	0.0034930	20.050
8712766	0.015690	0.011450	0.0051200	23.140
8712853	0.009073	0.013500	0.0017060	16.110
87139402	0.012410	0.019240	0.0022480	13.500
87163	0.009443	0.015200	0.0018680	17.980
87164	0.013200	0.017920	0.0041680	18.790
871641	0.015830	0.030820	0.0047850	11.350
871642	0.000000	0.032650	0.0010020	11.540
872113	0.000000	0.027110	0.0033990	9.262
872608	0.024600	0.038800	0.0179200	11.260
87281702	0.018130	0.016820	0.0045840	17.790
873357	0.001852	0.016130	0.0009683	14.000
873586	0.007408	0.010650	0.0033510	13.630
873592	0.012410	0.015750	0.0027470	33.120
873593	0.015670	0.017980	0.0052950	26.680
873701	0.009767	0.015470	0.0024300	20.110
873843	0.017120	0.021650	0.0047840	12.370
873885	0.006009	0.011720	0.0025750	17.800
874158	0.002404	0.025380	0.0034700	11.870
874217	0.006719	0.010690	0.0010870	21.310
874373	0.011850	0.018970	0.0016710	13.010
874662	0.006240	0.031390	0.0019880	12.570
874839	0.006433	0.020250	0.0017250	13.350
874858	0.016660	0.051130	0.0117200	15.740
875093	0.017570	0.033730	0.0058750	13.750
875099	0.000000	0.037990	0.0016880	9.968
875263	0.013210	0.018780	0.0056720	15.650
87556202	0.018830	0.025450	0.0043120	16.080
875878	0.008420	0.018530	0.0021520	13.880
875938	0.020600	0.026890	0.0043060	16.390
877159	0.014440	0.021400	0.0050360	19.760
877486	0.012210	0.014150	0.0033970	23.360
877500	0.007303	0.015220	0.0019760	18.330
877501	0.011400	0.015030	0.0033380	14.440
877989	0.013450	0.015940	0.0026580	20.420
878796	0.024650	0.021750	0.0051950	25.120
87880	0.012910	0.019980	0.0045060	19.200
87930	0.010370	0.017820	0.0035860	14.970
879523	0.008260	0.015230	0.0028810	17.770
879804	0.007527	0.022100	0.0024720	10.420
879830	0.011230	0.022940	0.0025810	19.800
8810158	0.008304	0.025140	0.0041980	14.550
8810436	0.007373	0.009539	0.0016560	17.380

881046502	0.027650	0.031760	0.0023650	23.240
8810528	0.006747	0.016160	0.0029220	13.300
8810703	0.014070	0.047830	0.0044760	28.110
881094802	0.039270	0.021750	0.0125600	18.070
8810955	0.016270	0.044990	0.0047680	16.860
8810987	0.014350	0.019390	0.0045600	15.750
8811523	0.017850	0.027930	0.0047750	13.250
8811779	0.010710	0.025600	0.0046130	11.480
8811842	0.017120	0.018970	0.0040450	25.730
88119002	0.010780	0.013320	0.0022560	27.900
8812816	0.006659	0.013710	0.0027350	15.340
8812818	0.008360	0.018420	0.0029180	14.980
8812844	0.007624	0.026370	0.0037610	11.170
8812877	0.008637	0.017720	0.0031310	19.560
8813129	0.009057	0.014820	0.0024960	15.140
88143502	0.012860	0.022660	0.0014630	16.770
88147101	0.004972	0.015020	0.0028210	11.520
88147102	0.011550	0.013910	0.0032040	16.410
88147202	0.008691	0.013650	0.0034070	14.200
881861	0.014990	0.016800	0.0056170	15.200
881972	0.013840	0.011770	0.0023360	19.590
88199202	0.003125	0.015370	0.0020520	12.080
88203002	0.003419	0.019160	0.0025340	12.360
88206102	0.010910	0.012980	0.0028870	24.470
882488	0.009623	0.023830	0.0035400	10.510
88249602	0.010040	0.012630	0.0029250	15.330
88299702	0.017160	0.015900	0.0030530	31.010
883263	0.016710	0.013410	0.0039330	24.220
883270	0.010110	0.011850	0.0035890	15.750
88330202	0.013740	0.012260	0.0027590	22.510
88350402	0.011030	0.018980	0.0017940	14.850
883539	0.003762	0.017200	0.0013600	13.200
883852	0.013140	0.019950	0.0086750	12.580
88411702	0.010070	0.025980	0.0030870	15.010
884180	0.015590	0.021860	0.0039490	21.650
884437	0.011330	0.034760	0.0035600	11.480
884448	0.005383	0.019620	0.0022500	13.940
884626	0.013700	0.012660	0.0075550	14.390
88466802	0.006245	0.021580	0.0026190	12.250
884689	0.010060	0.016770	0.0027840	12.650
884948	0.018640	0.024010	0.0050020	25.580
88518501	0.009175	0.022920	0.0014610	12.970
885429	0.019710	0.014670	0.0072590	25.280

8860702	0.012620	0.013940	0.0023620	19.850
886226	0.012670	0.013650	0.0025500	25.700
886452	0.013420	0.020620	0.0026950	16.390
88649001	0.015190	0.019360	0.0052520	25.050
886776	0.021270	0.018840	0.0086600	17.730
887181	0.030240	0.023370	0.0060420	19.850
88725602	0.010220	0.009947	0.0033590	18.490
887549	0.008185	0.012820	0.0018920	24.330
888264	0.007671	0.014110	0.0015780	19.850
888570	0.021490	0.027470	0.0058380	20.390
889403	0.005174	0.010130	0.0013450	17.910
889719	0.009875	0.011440	0.0015750	21.580
88995002	0.009280	0.013670	0.0022990	32.490
8910251	0.013650	0.035040	0.0033180	11.880
8910499	0.009919	0.020300	0.0030090	14.800
8910506	0.006330	0.025930	0.0021570	13.900
8910720	0.017450	0.027280	0.0076100	11.690
8910721	0.003608	0.015360	0.0013810	14.910
8910748	0.008849	0.016920	0.0028170	12.320
8910988	0.015610	0.019240	0.0046140	28.190
8910996	0.009472	0.017980	0.0042610	10.750
8911163	0.008522	0.014190	0.0027510	20.920
8911164	0.019100	0.026780	0.0030020	12.400
8911230	0.003333	0.023580	0.0016270	12.200
8911670	0.014630	0.019300	0.0016760	19.960
8911800	0.005044	0.013440	0.0011260	15.500
8911834	0.010430	0.015280	0.0015930	14.980
8912049	0.012930	0.014350	0.0034460	23.720
8912055	0.018460	0.029210	0.0020050	13.310
89122	0.014990	0.016230	0.0019650	23.790
8912280	0.012090	0.013880	0.0040810	18.550
8912284	0.017740	0.018780	0.0036960	13.900
8912521	0.002924	0.025710	0.0020150	13.500
8912909	0.016330	0.018720	0.0080150	13.240
8913	0.005905	0.016190	0.0020810	13.620
8913049	0.034870	0.034180	0.0065170	11.860
89143601	0.009924	0.034160	0.0029280	12.360
89143602	0.027710	0.040770	0.0228600	15.770
8915	0.011870	0.015220	0.0028150	16.250
891670	0.011320	0.026250	0.0047260	13.740
891703	0.008578	0.017920	0.0017840	13.060
891716	0.007978	0.013740	0.0013920	13.500
891923	0.006829	0.021540	0.0018020	14.670

891936	0.009393	0.029410	0.0034280	11.370
892189	0.014320	0.015750	0.0027580	13.360
892214	0.005243	0.011030	0.0019570	16.220
892399	0.012500	0.034640	0.0019710	10.930
892438	0.017330	0.018840	0.0047870	25.930
892604	0.014030	0.027400	0.0046510	13.460
89263202	0.019360	0.027360	0.0059280	23.680
892657	0.009199	0.017910	0.0033170	11.060
89296	0.007807	0.018940	0.0034110	12.680
893061	0.006998	0.031940	0.0022110	12.440
89344	0.002386	0.013440	0.0025850	14.410
89346	0.003472	0.027010	0.0021530	9.699
893526	0.003242	0.014800	0.0015660	14.970
893548	0.004821	0.014220	0.0022730	14.730
893783	0.007638	0.023490	0.0016610	12.610
89382601	0.006324	0.014940	0.0008948	16.460
89382602	0.010690	0.017310	0.0043920	14.190
893988	0.004667	0.020320	0.0019520	12.340
894047	0.000000	0.061460	0.0068200	8.952
894089	0.003390	0.013930	0.0013440	13.340
894090	0.005051	0.019770	0.0009502	12.850
894326	0.011430	0.012750	0.0024510	21.840
894329	0.025270	0.034910	0.0078770	10.060
894335	0.011200	0.034330	0.0029610	12.900
894604	0.015440	0.027190	0.0075960	11.280
894618	0.012470	0.021930	0.0015890	23.060
894855	0.010110	0.012020	0.0031070	14.040
895100	0.013690	0.027680	0.0033450	25.300
89511501	0.005142	0.013330	0.0020650	13.750
89511502	0.006474	0.020570	0.0017840	13.710
89524	0.006627	0.014160	0.0024760	15.530
895299	0.003951	0.014660	0.0017550	13.070
8953902	0.013920	0.015360	0.0027890	19.280
895633	0.011860	0.040220	0.0061870	17.730
896839	0.014590	0.014670	0.0031210	18.760
896864	0.009811	0.027510	0.0045720	14.420
897132	0.004967	0.042430	0.0019630	11.980
897137	0.002941	0.017000	0.0020300	12.760
897374	0.006522	0.019390	0.0022220	13.350
89742801	0.017440	0.018290	0.0037330	20.990
897604	0.007315	0.016390	0.0057010	13.720
897630	0.018160	0.021680	0.0044450	24.540
897880	0.008043	0.021000	0.0027780	11.160

89812	0.013010	0.014790	0.0031180	30.670
89813	0.012430	0.018730	0.0033730	16.670
898143	0.008510	0.017500	0.0040310	10.750
89827	0.010100	0.023480	0.0029170	11.920
898431	0.018060	0.037560	0.0032880	22.750
89864002	0.011210	0.019530	0.0031000	13.060
898677	0.012960	0.036750	0.0067580	10.880
898678	0.005495	0.019820	0.0027540	13.640
89869	0.010670	0.021630	0.0027830	17.270
898690	0.006315	0.017550	0.0030090	12.510
899147	0.010520	0.027340	0.0031140	12.810
899187	0.006296	0.022160	0.0026680	13.280
899667	0.022830	0.055430	0.0073300	17.360
899987	0.015080	0.023350	0.0033850	33.130
9010018	0.017460	0.021200	0.0048670	18.510
901011	0.014710	0.031020	0.0048310	12.120
9010258	0.019660	0.026390	0.0042050	13.370
9010259	0.018760	0.028600	0.0057150	14.190
901028	0.006042	0.015440	0.0020870	15.110
9010333	0.015060	0.028370	0.0041740	9.981
901034301	0.006565	0.019420	0.0027130	12.020
901034302	0.003617	0.020430	0.0010580	13.720
901041	0.006399	0.018290	0.0019560	14.200
9010598	0.009997	0.019090	0.0021330	13.750
9010872	0.010330	0.016940	0.0020010	18.130
9010877	0.005484	0.012910	0.0020740	14.730
901088	0.014610	0.014450	0.0019060	24.310
9011494	0.025360	0.037100	0.0042860	24.190
9011495	0.007087	0.019380	0.0019600	14.290
9011971	0.011970	0.012630	0.0018030	30.750
9012000	0.014710	0.015180	0.0037960	27.660
9012315	0.016560	0.031970	0.0040850	19.380
9012568	0.009155	0.016470	0.0017670	16.200
9012795	0.013430	0.016750	0.0043670	22.690
901288	0.012320	0.012760	0.0017110	25.370
9013005	0.006335	0.019430	0.0021770	14.840
901303	0.011960	0.019340	0.0036960	16.970
901315	0.029190	0.016170	0.0122000	10.850
9013579	0.005179	0.014420	0.0016840	14.690
9013594	0.008356	0.018180	0.0048680	14.540
9013838	0.013390	0.017380	0.0044350	13.240
901549	0.011640	0.021080	0.0037210	12.840
901836	0.006960	0.018800	0.0019410	12.090

90250	0.016670	0.024700	0.0073580	12.570
90251	0.010510	0.018380	0.0068840	14.180
902727	0.008468	0.014610	0.0026130	14.240
90291	0.015760	0.017400	0.0028710	15.790
902975	0.010870	0.019210	0.0046220	13.130
902976	0.007016	0.016470	0.0019700	15.510
903011	0.020470	0.012190	0.0123300	12.040
90312	0.034410	0.027680	0.0062400	20.820
90317302	0.006929	0.019380	0.0023710	11.380
903483	0.000000	0.018650	0.0067360	10.170
903507	0.016390	0.018520	0.0042320	21.200
903516	0.012880	0.020450	0.0040280	26.230
903554	0.007513	0.020150	0.0017980	13.560
903811	0.009155	0.017190	0.0014440	14.920
90401601	0.013670	0.013150	0.0024640	14.800
90401602	0.013840	0.018690	0.0040670	13.740
904302	0.004168	0.011910	0.0035370	12.680
904357	0.005398	0.014770	0.0030710	13.450
90439701	0.010510	0.015910	0.0050990	20.800
904647	0.005832	0.010960	0.0018570	13.800
904689	0.010650	0.026320	0.0037050	14.130
9047	0.007308	0.018700	0.0019720	13.860
904969	0.010300	0.029700	0.0014320	13.180
904971	0.011550	0.020790	0.0027010	12.400
905189	0.008747	0.015000	0.0016210	17.710
905190	0.013410	0.026690	0.0077310	14.400
90524101	0.014800	0.014140	0.0033360	21.080
905501	0.010750	0.025780	0.0022670	14.100
905502	0.005872	0.013410	0.0016590	13.050
905520	0.007483	0.017180	0.0021980	12.410
905539	0.005128	0.019510	0.0045830	9.965
905557	0.011960	0.019060	0.0040150	16.760
905680	0.009087	0.031510	0.0017500	17.260
905686	0.009276	0.022580	0.0022720	13.050
905978	0.008674	0.030440	0.0045900	10.850
90602302	0.021390	0.020180	0.0058150	23.170
906024	0.008231	0.017130	0.0044140	13.650
906290	0.006159	0.026940	0.0020600	12.360
906539	0.008799	0.018680	0.0033390	13.070
906564	0.015800	0.026530	0.0054440	16.460
906616	0.013040	0.018480	0.0019820	12.640
906878	0.012740	0.015810	0.0039560	15.140
907145	0.010520	0.031000	0.0042250	11.210

907367	0.003527	0.014450	0.0024110	11.110
907409	0.012640	0.021610	0.0048300	12.130
90745	0.010450	0.018440	0.0026900	12.760
90769601	0.006189	0.020090	0.0023770	11.680
90769602	0.005623	0.019400	0.0011800	13.820
907914	0.022340	0.014990	0.0057840	16.350
907915	0.011670	0.021870	0.0060050	12.880
908194	0.019100	0.024510	0.0040050	22.030
908445	0.018340	0.023830	0.0045150	22.660
908469	0.008281	0.015510	0.0021680	16.310
908489	0.009567	0.012230	0.0028460	17.040
908916	0.006502	0.022230	0.0023780	14.450
909220	0.009046	0.020050	0.0028300	15.660
909231	0.007039	0.020140	0.0023260	15.630
909410	0.010760	0.011710	0.0021040	14.910
909411	0.017680	0.015160	0.0049760	12.360
909445	0.017420	0.015940	0.0037390	20.380
90944601	0.005657	0.012270	0.0025640	15.270
909777	0.011110	0.017170	0.0044920	10.940
9110127	0.009753	0.012950	0.0024360	20.380
9110720	0.016650	0.020940	0.0036740	12.980
9110732	0.011100	0.012370	0.0025560	21.530
9110944	0.006897	0.022540	0.0019710	16.430
911150	0.008848	0.013940	0.0023270	16.300
911157302	0.014660	0.010290	0.0022050	25.680
9111596	0.015530	0.023540	0.0089250	12.790
9111805	0.014990	0.016410	0.0018070	21.440
9111843	0.009166	0.017450	0.0043020	13.090
911201	0.011360	0.022070	0.0035630	15.800
911202	0.006888	0.016080	0.0016380	14.340
9112085	0.009128	0.015640	0.0029850	15.050
9112366	0.009215	0.024750	0.0021280	13.120
9112367	0.006451	0.013470	0.0018280	14.350
9112594	0.006336	0.012150	0.0015140	14.340
9112712	0.006104	0.015740	0.0022680	10.670
911296201	0.014580	0.020450	0.0044170	22.960
911296202	0.025980	0.016970	0.0045580	36.040
9113156	0.006370	0.014140	0.0018920	15.400
911320501	0.007497	0.021240	0.0027680	12.770
911320502	0.008463	0.010930	0.0016720	14.900
9113239	0.013680	0.015260	0.0081330	15.440
9113455	0.012540	0.015610	0.0032300	14.800
9113514	0.003934	0.026930	0.0029790	11.150

9113538	0.023110	0.016730	0.0113000	21.570
911366	0.018410	0.018070	0.0052170	13.360
9113778	0.009883	0.019600	0.0039130	11.140
9113816	0.011830	0.020470	0.0038830	13.600
911384	0.008399	0.011480	0.0023790	17.180
9113846	0.000000	0.031410	0.0031360	13.450
911391	0.006691	0.012120	0.0046720	11.940
911408	0.008360	0.016010	0.0022890	14.090
911654	0.013500	0.016100	0.0027440	16.450
911673	0.004832	0.013160	0.0020950	15.140
911685	0.008038	0.018430	0.0036140	12.400
911916	0.022150	0.027730	0.0063550	17.390
912193	0.005161	0.014540	0.0018580	13.340
91227	0.006275	0.010620	0.0022170	16.410
912519	0.008791	0.016980	0.0027870	14.830
912558	0.009233	0.012850	0.0015240	14.960
912600	0.010670	0.011750	0.0022560	17.010
913063	0.027210	0.032320	0.0096270	13.780
913102	0.006144	0.012540	0.0012190	16.460
913505	0.011760	0.017170	0.0032110	23.960
913512	0.011670	0.021520	0.0032130	13.320
913535	0.005297	0.019610	0.0017000	19.180
91376701	0.004551	0.016080	0.0023990	14.170
91376702	0.007437	0.013020	0.0013090	19.820
914062	0.016480	0.028970	0.0039960	21.530
914101	0.007895	0.028690	0.0048210	13.190
914102	0.005564	0.020860	0.0027010	14.500
914333	0.011830	0.019590	0.0018120	16.010
914366	0.010320	0.017590	0.0035630	14.380
914580	0.007096	0.015360	0.0015410	14.060
914769	0.015730	0.016170	0.0052550	22.750
91485	0.014790	0.011170	0.0037270	23.860
914862	0.010040	0.010550	0.0032370	16.760
91504	0.016160	0.024340	0.0069950	16.010
91505	0.011610	0.028010	0.0024800	13.570
915143	0.021560	0.022010	0.0028970	30.790
915186	0.021880	0.025420	0.0104500	10.280
915276	0.014500	0.026320	0.0114800	10.600
91544001	0.009894	0.013200	0.0038130	13.160
91544002	0.012850	0.022200	0.0083130	11.690
915452	0.014310	0.013440	0.0025690	17.320
915460	0.020410	0.021050	0.0060000	17.110
91550	0.015280	0.022600	0.0068220	12.450

915664	0.010560	0.015800	0.0017790	15.610
915691	0.013340	0.017050	0.0040050	16.410
915940	0.008648	0.015390	0.0022810	16.760
91594602	0.009423	0.011520	0.0017180	17.580
916221	0.011070	0.024340	0.0012170	12.470
916799	0.010460	0.015590	0.0027250	21.860
916838	0.011780	0.010570	0.0033910	23.730
917062	0.012440	0.018160	0.0032990	15.050
917080	0.009199	0.018050	0.0036290	14.450
917092	0.015800	0.039970	0.0039010	10.570
91762702	0.015970	0.018790	0.0047600	29.920
91789	0.004065	0.014870	0.0022950	11.930
917896	0.013520	0.018700	0.0037470	15.110
917897	0.006801	0.018240	0.0034940	11.240
91805	0.007320	0.015920	0.0039250	9.473
91813701	0.007369	0.013540	0.0017870	15.350
91813702	0.005740	0.011290	0.0013660	13.610
918192	0.028530	0.017150	0.0055280	14.620
918465	0.007986	0.019620	0.0022340	13.450
91858	0.013160	0.018350	0.0023180	13.500
91903901	0.005298	0.014490	0.0026710	13.350
91903902	0.005077	0.010540	0.0016970	15.850
91930402	0.016990	0.028160	0.0027190	23.230
919537	0.013460	0.013220	0.0035340	11.620
919555	0.014210	0.019480	0.0026890	24.300
91979701	0.012760	0.014510	0.0037560	15.290
919812	0.017660	0.015600	0.0058240	12.980
921092	0.000000	0.028820	0.0068720	9.077
921362	0.013640	0.021050	0.0075510	8.678
921385	0.014940	0.018400	0.0055120	12.260
921386	0.011620	0.020680	0.0061110	16.220
921644	0.012690	0.018700	0.0026260	16.510
922296	0.009117	0.017240	0.0013430	14.370
922297	0.009061	0.014900	0.0035990	15.050
922576	0.009064	0.020870	0.0025830	15.350
922577	0.005495	0.015600	0.0026060	11.250
922840	0.010970	0.022770	0.0058900	10.830
923169	0.009615	0.022030	0.0041540	10.930
923465	0.005917	0.024660	0.0029770	13.030
923748	0.000000	0.030040	0.0022280	11.660
923780	0.010240	0.029120	0.0047230	12.020
924084	0.009305	0.018970	0.0017260	13.870
924342	0.012820	0.037590	0.0046230	9.845

924632	0.007620	0.016950	0.0028010	13.890
924934	0.017210	0.018430	0.0049380	10.840
924964	0.007082	0.025720	0.0022780	10.650
925236	0.000000	0.030040	0.0033240	10.490
925277	0.016060	0.016380	0.0044060	15.480
925291	0.012670	0.014880	0.0047380	12.480
925292	0.016260	0.020800	0.0053040	15.300
925311	0.000000	0.019890	0.0017730	11.920
925622	0.016080	0.021370	0.0061420	17.520
926125	0.026240	0.020570	0.0062130	24.290
926424	0.024540	0.011140	0.0042390	25.450
926682	0.016780	0.018980	0.0024980	23.690
926954	0.015570	0.013180	0.0038920	18.980
927241	0.016640	0.023240	0.0061850	25.740
92751	0.000000	0.026760	0.0027830	9.456

	texture_worst	perimeter_worst	area_worst	smoothness_worst
842302	17.33	184.60	2019.0	0.16220
842517	23.41	158.80	1956.0	0.12380
84300903	25.53	152.50	1709.0	0.14440
84348301	26.50	98.87	567.7	0.20980
84358402	16.67	152.20	1575.0	0.13740
843786	23.75	103.40	741.6	0.17910
844359	27.66	153.20	1606.0	0.14420
84458202	28.14	110.60	897.0	0.16540
844981	30.73	106.20	739.3	0.17030
84501001	40.68	97.65	711.4	0.18530
845636	33.88	123.80	1150.0	0.11810
84610002	27.28	136.50	1299.0	0.13960
846226	29.94	151.70	1332.0	0.10370
846381	27.66	112.00	876.5	0.11310
84667401	32.01	108.80	697.7	0.16510
84799002	37.13	124.10	943.2	0.16780
848406	30.88	123.40	1138.0	0.14640
84862001	31.48	136.80	1315.0	0.17890
849014	30.88	186.80	2398.0	0.15120
8510426	19.26	99.70	711.2	0.14400
8510653	20.49	96.09	630.5	0.13120
8510824	15.66	65.13	314.9	0.13240
8511133	19.08	125.10	980.9	0.13900
851509	35.59	188.00	2615.0	0.14010
852552	31.56	177.00	2215.0	0.18050
852631	21.40	152.40	1461.0	0.15450
852763	33.21	122.40	896.9	0.15250

852781	27.26	139.90	1403.0	0.13380
852973	36.71	149.30	1269.0	0.16410
853201	19.52	134.90	1227.0	0.12550
853401	34.01	160.50	1670.0	0.14910
853612	28.12	119.40	888.7	0.16370
85382601	32.09	136.10	1344.0	0.16340
854002	30.90	161.40	1813.0	0.15090
854039	27.26	132.70	1261.0	0.14460
854253	29.02	133.50	1229.0	0.15630
854268	30.36	116.20	799.6	0.14460
854941	22.81	84.46	545.9	0.09701
855133	25.20	95.54	698.8	0.09387
855138	26.02	107.30	740.4	0.16100
855167	30.25	102.50	787.9	0.10940
855563	35.34	87.22	514.0	0.19090
855625	33.17	177.40	1651.0	0.12470
856106	28.00	113.10	907.2	0.15300
85638502	29.89	105.50	740.7	0.15030
857010	21.32	150.60	1567.0	0.16790
85713702	21.96	57.26	242.2	0.12970
85715	27.95	102.80	759.4	0.17860
857155	20.70	89.88	582.6	0.14940
857156	31.82	99.00	698.8	0.11620
857343	25.72	82.98	516.5	0.10850
857373	23.19	96.08	656.7	0.10890
857374	21.33	83.67	527.2	0.11440
857392	24.13	135.10	1321.0	0.12800
857438	31.69	117.70	1030.0	0.13890
85759902	22.47	81.81	506.2	0.12490
857637	28.14	170.10	2145.0	0.16240
857793	30.70	115.70	985.5	0.13680
857810	22.25	90.24	624.1	0.10210
858477	15.40	59.90	274.9	0.17330
858970	17.45	69.86	368.6	0.12750
858981	27.04	62.06	273.9	0.16390
858986	29.51	119.10	959.5	0.16400
859196	19.23	65.59	310.1	0.09836
85922302	33.47	111.80	888.3	0.18510
859283	33.39	114.60	925.1	0.16480
859464	31.56	67.03	330.7	0.15480
859465	23.84	78.00	466.7	0.12900
859471	22.65	65.50	324.7	0.14820
859487	19.76	85.67	554.9	0.12960

859575	26.58	165.90	1866.0	0.11930
859711	15.67	62.56	284.4	0.12070
859717	33.82	151.60	1681.0	0.15850
859983	20.86	110.30	812.4	0.14110
8610175	23.21	89.71	611.1	0.11760
8610404	24.56	128.80	1223.0	0.15000
8610629	12.49	91.36	605.5	0.14510
8610637	18.91	150.10	1610.0	0.14780
8610862	31.72	170.30	1623.0	0.16390
8610908	24.82	91.88	622.1	0.12890
861103	32.16	84.53	525.1	0.15570
8611161	23.19	96.66	614.9	0.15360
8611555	33.62	211.70	2562.0	0.15730
8611792	32.72	141.30	1298.0	0.13920
8612080	24.90	87.78	567.9	0.13770
8612399	27.68	152.20	1603.0	0.13980
86135501	29.25	108.40	808.9	0.13060
86135502	30.41	152.90	1623.0	0.12490
861597	30.50	91.46	574.7	0.13040
861598	18.24	109.40	803.6	0.12770
861648	29.11	102.90	803.7	0.11150
861799	25.84	107.50	830.9	0.12570
861853	22.35	104.50	830.6	0.10060
862009	25.94	97.59	699.4	0.13390
862028	24.23	123.50	1025.0	0.15510
86208	31.59	156.10	1750.0	0.11900
86211	20.92	82.14	495.2	0.11400
862261	26.29	68.81	366.1	0.13160
862485	17.16	82.96	512.5	0.14310
862548	30.86	109.50	826.4	0.14310
862717	35.27	108.60	906.5	0.12650
862722	19.54	50.41	185.2	0.15840
862965	32.84	84.58	547.8	0.11230
862980	26.83	72.22	361.2	0.15590
862989	23.31	74.22	402.8	0.12190
863030	22.40	106.40	827.2	0.18620
863031	29.26	85.51	521.7	0.16880
863270	27.49	85.56	544.1	0.11840
86355	28.01	206.80	2360.0	0.17010
864018	29.15	83.99	518.1	0.16990
864033	21.47	71.68	367.0	0.14670
86408	25.47	89.00	527.4	0.12870
86409	23.73	107.00	709.0	0.08949

864292	22.75	72.62	374.4	0.13000
864496	19.62	64.48	284.4	0.17240
864685	26.15	87.54	583.0	0.15000
864726	17.07	63.34	270.0	0.11790
864729	27.37	127.10	1095.0	0.18780
864877	30.50	130.30	1272.0	0.18550
865128	27.83	129.20	1261.0	0.10720
865137	15.97	83.74	510.5	0.15480
86517	24.90	145.40	1549.0	0.15030
865423	23.99	180.90	2073.0	0.16960
865432	15.98	102.80	745.5	0.13130
865468	22.75	91.99	632.1	0.10250
86561	23.58	100.30	725.9	0.11570
866083	35.64	113.20	848.7	0.14710
866203	25.73	148.20	1538.0	0.10210
866458	18.33	105.90	762.6	0.13860
866674	33.58	148.70	1589.0	0.12750
866714	17.81	91.38	545.2	0.14270
8670	26.00	124.90	1156.0	0.15460
86730502	31.68	129.70	1175.0	0.13950
867387	19.25	114.30	922.8	0.12230
867739	31.39	145.60	1590.0	0.14650
868202	33.37	92.04	653.6	0.14190
868223	25.48	86.16	546.7	0.12710
868682	22.02	79.93	462.0	0.11900
868826	21.43	121.40	971.4	0.14110
868871	15.77	76.53	434.0	0.13670
868999	14.10	66.53	342.9	0.12340
869104	25.27	129.00	1233.0	0.13140
869218	26.76	82.66	503.0	0.14130
869224	21.82	97.17	643.8	0.13120
869254	20.72	77.79	441.2	0.10760
869476	16.51	86.26	509.6	0.14240
869691	26.38	91.93	591.7	0.13850
86973701	25.47	107.10	809.7	0.09970
86973702	19.85	108.60	766.9	0.13160
869931	22.46	97.19	725.9	0.09711
871001501	24.11	90.82	616.7	0.12970
871001502	29.72	58.08	249.8	0.16300
8710441	19.49	71.04	380.5	0.12920
87106	16.30	76.25	440.8	0.13410
8711002	20.50	97.67	677.3	0.14780
8711003	25.22	86.60	564.2	0.12170

8711202	25.11	132.90	1302.0	0.14180
8711216	28.07	120.30	1032.0	0.08774
871122	18.41	84.08	532.8	0.12750
871149	18.20	78.07	470.0	0.11710
8711561	26.21	88.91	543.9	0.13580
8711803	17.81	146.60	1495.0	0.11240
871201	26.39	174.90	2232.0	0.14380
8712064	28.68	87.36	553.0	0.14520
8712289	28.22	184.20	2403.0	0.12280
8712291	25.82	102.30	782.1	0.10450
87127	12.02	73.66	414.0	0.14360
8712729	26.30	130.70	1260.0	0.11680
8712766	32.33	155.30	1660.0	0.13760
8712853	23.00	104.60	793.7	0.12160
87139402	15.64	86.97	549.1	0.13850
87163	29.87	116.60	993.6	0.14010
87164	17.04	125.00	1102.0	0.15310
871641	16.82	72.01	396.5	0.12160
871642	19.20	73.20	408.3	0.10760
872113	17.04	58.36	259.2	0.11620
872608	24.39	73.07	390.2	0.13010
87281702	28.45	123.50	981.2	0.14150
873357	29.02	88.18	608.8	0.08125
873586	16.15	86.70	570.7	0.11620
873592	32.85	220.80	3216.0	0.14720
873593	33.48	176.50	2089.0	0.14910
873701	32.82	129.30	1269.0	0.14140
873843	17.70	79.12	467.2	0.11210
873885	28.03	113.80	973.1	0.13010
874158	21.18	75.39	437.0	0.15210
874217	26.36	139.20	1410.0	0.12340
874373	21.39	84.42	521.5	0.13230
874662	26.48	79.57	489.5	0.13560
874839	19.59	86.65	546.7	0.10960
874858	37.18	106.40	762.4	0.15330
875093	23.50	89.04	579.5	0.09388
875099	20.83	62.25	303.8	0.07117
875263	39.34	101.70	768.9	0.17850
87556202	27.78	118.60	784.7	0.13160
875878	22.00	90.81	600.6	0.10970
875938	34.01	111.60	806.9	0.17370
877159	24.70	129.10	1228.0	0.08822
877486	32.06	166.40	1688.0	0.13220

877500	30.12	117.90	1044.0	0.15520
877501	28.36	92.15	638.4	0.14290
877989	25.84	139.50	1239.0	0.13810
878796	32.68	177.00	1986.0	0.15360
87880	41.85	128.50	1153.0	0.22260
87930	24.64	96.05	677.9	0.14260
879523	20.24	117.70	989.5	0.14910
879804	23.22	67.08	331.6	0.14150
879830	25.05	130.00	1210.0	0.11110
8810158	29.16	99.48	639.3	0.13490
8810436	15.92	113.70	932.7	0.12220
881046502	27.84	158.30	1656.0	0.11780
8810528	24.99	85.22	546.3	0.12800
8810703	18.47	188.50	2499.0	0.11420
881094802	28.07	120.40	1021.0	0.12430
8810955	34.85	115.00	811.3	0.15590
8810987	26.93	104.40	750.1	0.14600
8811523	27.10	86.20	531.2	0.14050
8811779	24.47	75.40	403.7	0.09527
8811842	28.64	170.30	2009.0	0.13530
88119002	45.41	180.20	2477.0	0.14080
8812816	16.35	99.71	706.2	0.13110
8812818	17.13	101.10	686.6	0.13760
8812844	22.84	71.94	375.6	0.14060
8812877	30.29	125.90	1088.0	0.15520
8813129	23.60	98.84	708.8	0.12760
88143502	16.90	110.40	873.2	0.12970
88147101	19.80	73.47	395.4	0.13410
88147102	19.31	114.20	808.2	0.11360
88147202	31.31	90.67	624.0	0.12270
881861	30.15	105.30	706.0	0.17770
881972	24.89	133.50	1189.0	0.17030
88199202	33.75	79.82	452.3	0.09203
88203002	41.78	78.44	470.9	0.09994
88206102	37.38	162.70	1872.0	0.12230
882488	19.16	65.74	335.9	0.15040
88249602	30.28	98.27	715.5	0.12870
88299702	34.51	206.00	2944.0	0.14810
883263	26.17	161.70	1750.0	0.12280
883270	40.54	102.50	764.0	0.10810
88330202	44.87	141.20	1408.0	0.13650
88350402	19.05	94.11	683.4	0.12780
883539	20.37	83.85	543.4	0.10370

883852	27.96	87.16	472.9	0.13470
88411702	26.34	98.00	706.0	0.09368
884180	30.53	144.90	1417.0	0.14630
884437	29.46	73.68	402.8	0.15150
884448	27.82	88.28	602.0	0.11010
884626	17.70	105.00	639.1	0.12540
88466802	35.19	77.98	455.7	0.14990
884689	21.19	80.88	491.8	0.13890
884948	27.00	165.30	2010.0	0.12110
88518501	22.46	83.12	508.9	0.11830
885429	25.59	159.80	1933.0	0.17100
8860702	25.09	130.90	1222.0	0.14160
886226	24.57	163.10	1972.0	0.14970
886452	22.07	108.10	826.0	0.15120
88649001	36.27	178.60	1926.0	0.12810
886776	22.66	119.80	928.8	0.17650
887181	31.64	143.70	1226.0	0.15040
88725602	49.54	126.30	1035.0	0.18830
887549	39.16	162.30	1844.0	0.15220
888264	31.47	128.20	1218.0	0.12400
888570	27.24	137.90	1295.0	0.11340
889403	31.67	115.90	988.6	0.10840
889719	29.33	140.50	1436.0	0.15580
88995002	47.16	214.00	3432.0	0.14010
8910251	22.94	78.28	424.8	0.12130
8910499	30.04	97.66	661.5	0.10050
8910506	23.64	89.27	597.5	0.12560
8910720	25.21	76.51	410.4	0.13350
8910721	20.65	94.44	684.6	0.08567
8910748	16.18	78.27	457.5	0.13580
8910988	28.18	195.90	2384.0	0.12720
8910996	20.88	68.09	355.2	0.14670
8911163	34.69	135.10	1320.0	0.13150
8911164	18.99	79.46	472.4	0.13590
8911230	18.99	77.37	458.0	0.12590
8911670	24.30	129.00	1236.0	0.12430
8911800	26.10	98.91	739.1	0.10500
8911834	21.74	98.37	670.0	0.11850
8912049	35.90	159.80	1724.0	0.17820
8912055	18.26	84.70	533.7	0.10360
89122	28.65	152.40	1628.0	0.15180
8912280	25.09	126.90	1031.0	0.13650
8912284	19.69	92.12	595.6	0.09926

8912521	23.08	85.56	564.1	0.10380
8912909	27.29	92.20	546.1	0.11160
8913	15.54	87.40	577.0	0.09616
8913049	22.33	78.27	437.6	0.10280
89143601	26.14	79.29	459.3	0.11180
89143602	22.13	101.70	767.3	0.09983
8915	26.19	109.10	809.8	0.13130
891670	19.93	88.81	585.4	0.14830
891703	25.75	84.35	517.8	0.13690
891716	17.48	88.54	553.7	0.12980
891923	16.93	94.17	661.1	0.11700
891936	14.82	72.42	392.2	0.09312
892189	23.39	85.10	553.6	0.11370
892214	25.26	105.80	819.7	0.09445
892399	24.22	70.10	362.7	0.11430
892438	26.24	171.10	2053.0	0.14950
892604	23.07	88.13	551.3	0.10500
89263202	29.43	158.80	1696.0	0.13470
892657	24.54	70.76	375.4	0.14130
89296	21.61	82.69	489.8	0.11440
893061	31.62	81.39	476.5	0.09545
89344	20.45	92.00	636.9	0.11280
89346	20.07	60.90	285.5	0.09861
893526	16.94	95.48	698.7	0.09023
893548	17.40	93.96	672.4	0.10160
893783	26.55	80.92	483.1	0.12230
89382601	21.75	103.70	840.8	0.10110
89382602	16.40	92.04	618.8	0.11940
893988	12.87	81.23	467.8	0.10920
894047	22.44	56.65	240.1	0.13470
894089	19.71	84.48	544.2	0.11040
894090	16.47	81.60	513.1	0.10010
894326	25.00	140.90	1485.0	0.14340
894329	23.40	68.62	297.1	0.12210
894335	20.21	81.76	515.9	0.08409
894604	20.61	71.53	390.4	0.14020
894618	23.03	150.20	1657.0	0.10540
894855	21.08	92.80	599.5	0.15470
895100	31.86	171.10	1938.0	0.15920
89511501	21.38	91.11	583.1	0.12560
89511502	21.10	88.70	574.4	0.13840
89524	18.00	98.40	749.9	0.12810
895299	22.25	82.74	523.4	0.10130

8953902	30.38	129.80	1121.0	0.15900
895633	25.21	113.70	975.2	0.14260
896839	21.98	124.30	1070.0	0.14350
896864	21.95	99.21	634.3	0.12880
897132	25.78	76.91	436.1	0.14240
897137	22.06	82.08	492.7	0.11660
897374	28.46	84.53	544.3	0.12220
89742801	33.15	143.20	1362.0	0.14490
897604	16.91	87.38	576.0	0.11420
897630	34.37	161.10	1873.0	0.14980
897880	26.84	71.98	384.0	0.14020
89812	30.73	202.40	2906.0	0.15150
89813	21.51	111.40	862.1	0.12940
898143	23.07	71.25	353.6	0.12330
89827	19.90	79.76	440.0	0.14180
898431	34.66	157.60	1540.0	0.12180
89864002	18.16	84.16	516.4	0.14600
898677	19.48	70.89	357.1	0.13600
898678	27.06	86.54	562.6	0.12890
89869	17.93	114.20	880.8	0.12200
898690	20.79	79.67	475.8	0.15310
899147	17.72	83.09	496.2	0.12930
899187	19.74	83.61	542.5	0.09958
899667	24.17	119.40	915.3	0.15500
899987	23.58	229.30	3234.0	0.15300
9010018	33.22	121.20	1050.0	0.16600
901011	15.82	79.62	453.5	0.08864
9010258	22.43	89.02	547.4	0.10960
9010259	24.85	94.22	591.2	0.13430
901028	25.58	96.74	694.4	0.11530
9010333	17.70	65.27	302.0	0.10150
901034301	25.02	75.79	439.6	0.13330
901034302	20.98	86.82	585.7	0.09293
901041	29.20	92.94	621.2	0.11400
9010598	25.99	87.82	579.7	0.12980
9010872	25.45	117.20	1009.0	0.13380
9010877	21.70	93.76	663.5	0.12130
901088	26.37	161.20	1780.0	0.13270
9011494	33.81	160.00	1671.0	0.12780
9011495	24.04	93.85	624.6	0.13680
9011971	26.44	199.50	3143.0	0.13630
9012000	25.80	195.00	2227.0	0.12940
9012315	31.03	129.30	1165.0	0.14150

9012568	15.73	104.50	819.1	0.11260
9012795	21.84	152.10	1535.0	0.11920
901288	23.17	166.80	1946.0	0.15620
9013005	20.21	99.16	670.6	0.11050
901303	19.14	113.10	861.5	0.12350
901315	22.82	76.51	351.9	0.11430
9013579	35.63	97.11	680.6	0.11080
9013594	19.64	97.96	657.0	0.12750
9013838	32.82	91.76	508.1	0.21840
901549	20.53	84.93	476.1	0.16100
901836	20.83	79.73	447.1	0.10950
90250	28.71	87.36	488.4	0.08799
90251	23.13	95.23	600.5	0.14270
902727	17.37	96.59	623.7	0.11660
90291	31.71	102.20	758.2	0.13120
902975	19.29	87.65	529.9	0.10260
902976	19.97	99.66	745.3	0.08484
903011	18.93	79.73	450.0	0.11020
90312	30.44	142.00	1313.0	0.12510
90317302	15.65	73.23	394.5	0.13430
903483	22.80	64.01	317.0	0.14600
903507	29.41	142.10	1359.0	0.16810
903516	28.74	172.00	2081.0	0.15020
903554	25.80	88.33	559.5	0.14320
903811	25.34	96.42	684.5	0.10660
90401601	27.20	97.33	675.2	0.14280
90401602	21.06	90.72	591.0	0.09534
904302	20.35	80.79	496.7	0.11200
904357	24.49	86.00	562.0	0.12440
90439701	27.78	149.60	1304.0	0.18730
904647	20.14	87.64	589.5	0.13740
904689	24.61	96.31	621.9	0.09329
9047	23.02	89.69	580.9	0.11720
904969	16.85	84.11	533.1	0.10480
904971	25.58	82.76	472.4	0.13630
905189	19.58	115.90	947.9	0.12060
905190	27.01	91.63	645.8	0.09402
90524101	25.41	138.10	1349.0	0.14820
905501	28.88	89.00	610.2	0.12400
905502	36.32	85.07	521.3	0.14530
905520	26.44	79.93	471.4	0.13690
905539	27.99	66.61	301.0	0.10860
905557	31.55	110.20	867.1	0.10770

905680	36.91	110.10	931.4	0.11480
905686	27.21	85.09	522.9	0.14260
905978	31.24	68.73	359.4	0.15260
90602302	27.65	157.10	1748.0	0.15170
906024	16.92	88.12	566.9	0.13140
906290	28.92	79.26	458.0	0.12820
906539	26.98	86.43	520.5	0.12490
906564	18.34	114.10	809.2	0.13120
906616	19.67	81.93	475.7	0.14150
906878	25.50	101.40	708.8	0.11470
907145	23.17	71.79	380.9	0.13980
907367	28.94	69.92	376.3	0.11260
907409	21.57	81.41	440.4	0.13270
90745	32.04	83.69	489.5	0.13030
90769601	20.29	74.35	421.1	0.10300
90769602	20.96	88.87	586.8	0.10680
907914	27.57	125.40	832.7	0.14190
907915	22.91	89.61	515.8	0.14500
908194	25.07	146.00	1479.0	0.16650
908445	30.93	145.30	1603.0	0.13900
908469	20.54	102.30	777.5	0.12180
908489	30.80	113.90	869.3	0.16130
908916	24.38	95.14	626.9	0.12140
909220	21.58	101.20	750.0	0.11950
909231	28.01	100.90	749.1	0.11180
909410	19.31	96.53	688.9	0.10340
909411	26.87	90.14	476.4	0.13910
909445	35.46	132.80	1284.0	0.14360
90944601	17.50	97.90	706.6	0.10720
909777	23.31	69.35	366.3	0.09794
9110127	22.02	133.30	1292.0	0.12630
9110720	30.36	84.48	513.9	0.13110
9110732	38.54	145.40	1437.0	0.14010
9110944	22.74	105.90	829.5	0.12260
911150	28.39	108.10	830.5	0.10890
911157302	32.07	168.20	2022.0	0.13680
9111596	28.18	83.51	507.2	0.09457
9111805	30.96	139.80	1421.0	0.15280
9111843	37.88	85.07	523.7	0.12080
911201	16.93	103.10	749.9	0.13470
911202	22.15	91.62	633.5	0.12250
9112085	41.61	96.69	705.6	0.11720
9112366	38.81	86.04	527.8	0.14060

9112367	34.23	91.29	632.9	0.12890
9112594	31.88	91.06	628.5	0.12180
9112712	36.92	68.03	349.9	0.11100
911296201	34.49	152.10	1648.0	0.16000
911296202	31.37	251.20	4254.0	0.13570
9113156	31.98	100.40	734.6	0.10170
911320501	24.02	82.68	495.1	0.13420
911320502	23.89	95.10	687.6	0.12820
9113239	25.50	115.00	733.5	0.12010
9113455	25.46	100.90	689.1	0.13510
9113514	24.62	71.11	380.2	0.13880
9113538	28.87	143.60	1437.0	0.12070
911366	25.40	88.14	528.1	0.17800
9113778	25.62	70.88	385.2	0.12340
9113816	33.33	87.24	567.6	0.10410
911384	18.22	112.00	906.6	0.10650
9113846	38.05	85.08	558.9	0.09422
911391	19.35	80.78	433.1	0.13320
911408	19.35	93.22	605.8	0.13260
911654	27.26	112.10	828.5	0.11530
911673	21.80	101.20	718.9	0.09384
911685	21.90	82.04	467.6	0.13520
911916	23.05	122.10	939.7	0.13770
912193	27.87	88.83	547.4	0.12080
91227	26.42	104.40	830.5	0.10640
912519	18.32	94.94	660.2	0.13930
912558	23.53	95.78	686.5	0.11990
912600	14.20	112.50	854.3	0.15410
913063	21.03	97.82	580.6	0.11750
913102	25.44	106.00	831.0	0.11420
913505	30.39	153.90	1740.0	0.15140
913512	21.59	86.57	549.8	0.15260
913535	26.56	127.30	1084.0	0.10090
91376701	31.99	92.74	622.9	0.12560
91376702	18.42	127.10	1210.0	0.09862
914062	26.06	143.40	1426.0	0.13090
914101	16.36	83.24	534.0	0.09439
914102	28.46	95.29	648.3	0.11180
914333	28.48	103.90	783.6	0.12160
914366	22.15	95.29	633.7	0.15330
914580	24.34	92.82	607.3	0.12760
914769	22.88	146.40	1600.0	0.14120
91485	30.76	163.20	1760.0	0.14640

914862	20.43	109.70	856.9	0.11350
91504	32.94	106.00	788.0	0.17940
91505	21.40	86.67	552.0	0.15800
915143	23.87	211.50	2782.0	0.11990
915186	16.38	69.05	300.2	0.19020
915276	18.04	69.47	328.1	0.20060
91544001	24.17	85.13	515.3	0.14020
91544002	20.74	76.08	411.1	0.16620
915452	17.76	109.80	928.2	0.13540
915460	36.33	117.70	909.4	0.17320
91550	17.60	81.25	473.8	0.10730
915664	17.58	101.70	760.2	0.11390
915691	29.66	113.30	844.4	0.15740
915940	17.24	108.50	862.0	0.12230
91594602	28.06	113.80	967.0	0.12460
916221	23.03	79.15	478.6	0.14830
916799	26.20	142.20	1493.0	0.14920
916838	25.23	160.50	1646.0	0.14170
917062	24.37	99.31	674.7	0.14560
917080	21.74	93.63	624.1	0.14750
917092	17.84	67.84	326.6	0.18500
91762702	26.93	205.70	2642.0	0.13420
91789	26.43	76.38	435.9	0.11080
917896	25.63	99.43	701.9	0.14250
917897	22.99	74.32	376.5	0.14190
91805	18.45	63.30	275.6	0.16410
91813701	25.16	101.90	719.8	0.16240
91813702	19.27	87.22	564.9	0.12920
918192	15.38	94.52	653.3	0.13940
918465	15.77	86.92	549.9	0.15210
91858	27.98	88.52	552.3	0.13490
91903901	28.81	87.00	550.6	0.15500
91903902	20.20	101.60	773.4	0.12640
91930402	27.15	152.00	1645.0	0.10970
919537	26.51	76.43	407.5	0.14280
919555	25.48	160.20	1809.0	0.12680
91979701	34.27	104.30	728.3	0.13800
919812	32.19	86.12	487.7	0.17680
921092	30.92	57.17	248.0	0.12560
921362	31.89	54.49	223.6	0.15960
921385	19.68	78.78	457.8	0.13450
921386	31.73	113.50	808.9	0.13400
921644	32.29	107.40	826.4	0.10600

922296	37.17	92.48	629.6	0.10720
922297	24.75	99.17	688.6	0.12640
922576	29.09	97.58	729.8	0.12160
922577	21.77	71.12	384.9	0.12850
922840	22.04	71.08	357.4	0.14610
923169	25.59	69.10	364.2	0.11990
923465	31.45	83.90	505.6	0.12040
923748	24.77	74.08	412.3	0.10010
923780	28.26	77.80	436.6	0.10870
924084	36.00	88.10	594.7	0.12340
924342	25.05	62.86	295.8	0.11030
924632	35.74	88.84	595.7	0.12270
924934	34.91	69.57	357.6	0.13840
924964	22.88	67.88	347.3	0.12650
925236	34.24	66.50	330.6	0.10730
925277	27.27	105.90	733.5	0.10260
925291	37.16	82.28	474.2	0.12980
925292	33.17	100.20	706.7	0.12410
925311	38.30	75.19	439.6	0.09267
925622	42.79	128.70	915.0	0.14170
926125	29.41	179.10	1819.0	0.14070
926424	26.40	166.10	2027.0	0.14100
926682	38.25	155.00	1731.0	0.11660
926954	34.12	126.70	1124.0	0.11390
927241	39.42	184.60	1821.0	0.16500
92751	30.37	59.16	268.6	0.08996

	compactness_worst	concavity_worst	concave.points_worst	symmetry_worst
842302	0.66560	0.711900	0.265400	0.4601
842517	0.18660	0.241600	0.186000	0.2750
84300903	0.42450	0.450400	0.243000	0.3613
84348301	0.86630	0.686900	0.257500	0.6638
84358402	0.20500	0.400000	0.162500	0.2364
843786	0.52490	0.535500	0.174100	0.3985
844359	0.25760	0.378400	0.193200	0.3063
84458202	0.36820	0.267800	0.155600	0.3196
844981	0.54010	0.539000	0.206000	0.4378
84501001	1.05800	1.105000	0.221000	0.4366
845636	0.15510	0.145900	0.099750	0.2948
84610002	0.56090	0.396500	0.181000	0.3792
846226	0.39030	0.363900	0.176700	0.3176
846381	0.19240	0.232200	0.111900	0.2809
84667401	0.77250	0.694300	0.220800	0.3596
84799002	0.65770	0.702600	0.171200	0.4218

848406	0.18710	0.291400	0.160900	0.3029
84862001	0.42330	0.478400	0.207300	0.3706
849014	0.31500	0.537200	0.238800	0.2768
8510426	0.17730	0.239000	0.128800	0.2977
8510653	0.27760	0.189000	0.072830	0.3184
8510824	0.11480	0.088670	0.062270	0.2450
8511133	0.59540	0.630500	0.239300	0.4667
851509	0.26000	0.315500	0.200900	0.2822
852552	0.35780	0.469500	0.209500	0.3613
852631	0.39490	0.385300	0.255000	0.4066
852763	0.66430	0.553900	0.270100	0.4264
852781	0.21170	0.344600	0.149000	0.2341
852973	0.61100	0.633500	0.202400	0.4027
853201	0.28120	0.248900	0.145600	0.2756
853401	0.42570	0.613300	0.184800	0.3444
853612	0.57750	0.695600	0.154600	0.4761
85382601	0.35590	0.558800	0.184700	0.3530
854002	0.65900	0.609100	0.178500	0.3672
854039	0.58040	0.527400	0.186400	0.4270
854253	0.38350	0.540900	0.181300	0.4863
854268	0.42380	0.518600	0.144700	0.3591
854941	0.04619	0.048330	0.050130	0.1987
855133	0.05131	0.023980	0.028990	0.1565
855138	0.42250	0.503000	0.225800	0.2807
855167	0.20430	0.208500	0.111200	0.2994
855563	0.26980	0.402300	0.142400	0.2964
855625	0.74440	0.724200	0.249300	0.4670
856106	0.37240	0.366400	0.149200	0.3739
85638502	0.39040	0.372800	0.160700	0.3693
857010	0.50900	0.734500	0.237800	0.3799
85713702	0.13570	0.068800	0.025640	0.3105
85715	0.41660	0.500600	0.208800	0.3900
857155	0.21560	0.305000	0.065480	0.2747
857156	0.17110	0.228200	0.128200	0.2871
857343	0.08615	0.055230	0.037150	0.2433
857373	0.15820	0.105000	0.085860	0.2346
857374	0.08906	0.092030	0.062960	0.2785
857392	0.22970	0.262300	0.132500	0.3021
857438	0.20570	0.271200	0.153000	0.2675
85759902	0.08720	0.090760	0.063160	0.3306
857637	0.35110	0.387900	0.209100	0.3537
857793	0.42900	0.358700	0.183400	0.3698
857810	0.06191	0.001845	0.011110	0.2439

858477	0.12390	0.116800	0.044190	0.3220
858970	0.09866	0.021680	0.025790	0.3557
858981	0.16980	0.090010	0.027780	0.2972
858986	0.62470	0.692200	0.178500	0.2844
859196	0.16780	0.139700	0.050870	0.3282
85922302	0.40610	0.402400	0.171600	0.3383
859283	0.34160	0.302400	0.161400	0.3321
859464	0.16640	0.094120	0.065170	0.2878
859465	0.09148	0.144400	0.069610	0.2400
859471	0.43650	1.252000	0.175000	0.4228
859487	0.07061	0.103900	0.058820	0.2383
859575	0.23360	0.268700	0.178900	0.2551
859711	0.24360	0.143400	0.047860	0.2254
859717	0.73940	0.656600	0.189900	0.3313
859983	0.35420	0.277900	0.138300	0.2589
8610175	0.18430	0.170300	0.086600	0.2618
8610404	0.20450	0.282900	0.152000	0.2650
8610629	0.13790	0.085390	0.074070	0.2710
8610637	0.56340	0.378600	0.210200	0.3751
8610862	0.61640	0.768100	0.250800	0.5440
8610908	0.21410	0.173100	0.079260	0.2779
861103	0.16760	0.175500	0.061270	0.2762
8611161	0.47910	0.485800	0.170800	0.3527
8611555	0.60760	0.647600	0.286700	0.2355
8611792	0.28170	0.243200	0.184100	0.2311
8612080	0.20030	0.226700	0.076320	0.3379
8612399	0.20890	0.315700	0.164200	0.3695
86135501	0.19760	0.334900	0.122500	0.3020
86135502	0.32060	0.575500	0.195600	0.3956
861597	0.24630	0.243400	0.120500	0.2972
861598	0.30890	0.260400	0.139700	0.3151
861648	0.17660	0.091890	0.069460	0.2522
861799	0.19970	0.284600	0.147600	0.2556
861853	0.12380	0.135000	0.100100	0.2027
862009	0.17510	0.138100	0.079110	0.2678
862028	0.42030	0.520300	0.211500	0.2834
86208	0.35390	0.409800	0.157300	0.3689
86211	0.09358	0.049800	0.058820	0.2227
862261	0.09473	0.020490	0.023810	0.1934
862485	0.18510	0.192200	0.084490	0.2772
862548	0.30260	0.319400	0.156500	0.2718
862717	0.19430	0.316900	0.118400	0.2651
862722	0.12020	0.000000	0.000000	0.2932

862965	0.08862	0.114500	0.074310	0.2694
862980	0.23020	0.264400	0.097490	0.2622
862989	0.14860	0.079870	0.032030	0.2826
863030	0.40990	0.637600	0.198600	0.3147
863031	0.26600	0.287300	0.121800	0.2806
863270	0.19630	0.193700	0.084420	0.2983
86355	0.69970	0.960800	0.291000	0.4055
864018	0.21960	0.312000	0.082780	0.2829
864033	0.17650	0.130000	0.053340	0.2533
86408	0.22500	0.221600	0.110500	0.2226
86409	0.41930	0.678300	0.150500	0.2398
864292	0.20490	0.129500	0.061360	0.2383
864496	0.23640	0.245600	0.105000	0.2926
864685	0.23990	0.150300	0.072470	0.2438
864726	0.18790	0.154400	0.038460	0.1652
864729	0.44800	0.470400	0.202700	0.3585
864877	0.49250	0.735600	0.203400	0.3274
865128	0.12020	0.224900	0.118500	0.4882
865137	0.23900	0.210200	0.089580	0.3016
86517	0.22910	0.327200	0.167400	0.2894
865423	0.42440	0.580300	0.224800	0.3222
865432	0.17880	0.256000	0.122100	0.2889
865468	0.25310	0.330800	0.089780	0.2048
86561	0.13500	0.081150	0.051040	0.2364
866083	0.28840	0.379600	0.132900	0.3470
866203	0.22640	0.320700	0.121800	0.2841
866458	0.28830	0.196000	0.142300	0.2590
866674	0.38610	0.567300	0.173200	0.3305
866714	0.25850	0.099150	0.081870	0.3469
8670	0.23940	0.379100	0.151400	0.2837
86730502	0.30550	0.299200	0.131200	0.3480
867387	0.19490	0.170900	0.137400	0.2723
867739	0.22750	0.396500	0.137900	0.3109
868202	0.15230	0.217700	0.093310	0.2829
868223	0.10280	0.104600	0.069680	0.1712
868682	0.16480	0.139900	0.084760	0.2676
868826	0.21640	0.335500	0.166700	0.3414
868871	0.18220	0.086690	0.086110	0.2102
868999	0.07204	0.000000	0.000000	0.3105
869104	0.22360	0.280200	0.121600	0.2792
869218	0.17920	0.077080	0.064020	0.2584
869224	0.25480	0.209000	0.101200	0.3549
869254	0.12230	0.097550	0.034130	0.2300

869476	0.25170	0.094200	0.060420	0.2727
869691	0.40920	0.450400	0.186500	0.5774
86973701	0.25210	0.250000	0.084050	0.2852
86973702	0.27350	0.310300	0.159900	0.2691
869931	0.18240	0.156400	0.060190	0.2350
871001501	0.11050	0.081120	0.062960	0.3196
871001502	0.43100	0.538100	0.078790	0.3322
8710441	0.27720	0.821600	0.157100	0.3108
87106	0.08971	0.071160	0.055060	0.2859
8711002	0.22560	0.300900	0.097220	0.3849
8711003	0.17880	0.194300	0.082110	0.3113
8711202	0.34980	0.358300	0.151500	0.2463
8711216	0.17100	0.188200	0.084360	0.2527
871122	0.12320	0.086360	0.070250	0.2514
871149	0.08294	0.018540	0.039530	0.2738
8711561	0.18920	0.195600	0.079090	0.3168
8711803	0.20160	0.226400	0.177700	0.2443
871201	0.38460	0.681000	0.224700	0.3643
8712064	0.23380	0.168800	0.081940	0.2268
8712289	0.35830	0.394800	0.234600	0.3589
8712291	0.09995	0.077500	0.057540	0.2646
87127	0.12570	0.104700	0.046030	0.2090
8712729	0.21190	0.231800	0.147400	0.2810
8712766	0.38300	0.489000	0.172100	0.2160
8712853	0.16370	0.066480	0.084850	0.2404
87139402	0.12660	0.124200	0.093910	0.2827
87163	0.15460	0.264400	0.116000	0.2884
87164	0.35830	0.583000	0.182700	0.3216
871641	0.08240	0.039380	0.043060	0.1902
871642	0.06791	0.000000	0.000000	0.2710
872113	0.07057	0.000000	0.000000	0.2592
872608	0.29500	0.348600	0.099100	0.2614
87281702	0.46670	0.586200	0.203500	0.3054
873357	0.03432	0.007977	0.009259	0.2295
873586	0.05445	0.027580	0.039900	0.1783
873592	0.40340	0.534000	0.268800	0.2856
873593	0.75840	0.678000	0.290300	0.4098
873701	0.35470	0.290200	0.154100	0.3437
873843	0.16100	0.164800	0.062960	0.1811
873885	0.32990	0.363000	0.122600	0.3175
874158	0.10190	0.006920	0.010420	0.2933
874217	0.24450	0.353800	0.157100	0.3206
874373	0.10400	0.152100	0.109900	0.2572

874662	0.10000	0.088030	0.043060	0.3200
874839	0.16500	0.142300	0.048150	0.2482
874858	0.93270	0.848800	0.177200	0.5166
875093	0.08978	0.051860	0.047730	0.2179
875099	0.02729	0.000000	0.000000	0.1909
875263	0.47060	0.442500	0.145900	0.3215
87556202	0.46480	0.458900	0.172700	0.3000
875878	0.15060	0.176400	0.082350	0.3024
875938	0.31220	0.380900	0.167300	0.3080
877159	0.19630	0.253500	0.091810	0.2369
877486	0.56010	0.386500	0.170800	0.3193
877500	0.40560	0.496700	0.183800	0.4753
877501	0.20420	0.137700	0.108000	0.2668
877989	0.34200	0.350800	0.193900	0.2928
878796	0.41670	0.789200	0.273300	0.3198
87880	0.52090	0.464600	0.201300	0.4432
87930	0.23780	0.267100	0.101500	0.3014
879523	0.33310	0.332700	0.125200	0.3415
879804	0.12470	0.062130	0.055880	0.2989
879830	0.14860	0.193200	0.109600	0.3275
8810158	0.44020	0.316200	0.112600	0.4128
8810436	0.21860	0.296200	0.103500	0.2320
881046502	0.29200	0.386100	0.192000	0.2909
8810528	0.18800	0.147100	0.069130	0.2535
8810703	0.15160	0.320100	0.159500	0.1648
881094802	0.17930	0.280300	0.109900	0.1603
8810955	0.40590	0.374400	0.177200	0.4724
8810987	0.43700	0.463600	0.165400	0.3630
8811523	0.30460	0.280600	0.113800	0.3397
8811779	0.13970	0.192500	0.035710	0.2868
8811842	0.32350	0.361700	0.182000	0.3070
88119002	0.40970	0.399500	0.162500	0.2713
8812816	0.24740	0.175900	0.080560	0.2380
8812818	0.26980	0.257700	0.090900	0.3065
8812844	0.14400	0.065720	0.055750	0.3055
8812877	0.44800	0.397600	0.147900	0.3993
8813129	0.13110	0.178600	0.096780	0.2506
88143502	0.15250	0.163200	0.108700	0.3062
88147101	0.11530	0.026390	0.044640	0.2615
88147102	0.36270	0.340200	0.137900	0.2954
88147202	0.34540	0.391100	0.118000	0.2826
881861	0.53430	0.628200	0.197700	0.3407
881972	0.39340	0.501800	0.254300	0.3109

88199202	0.14320	0.108900	0.020830	0.2849
88203002	0.06885	0.023180	0.030020	0.2911
88206102	0.27610	0.414600	0.156300	0.2437
882488	0.09515	0.071610	0.072220	0.2757
88249602	0.15130	0.062310	0.079630	0.2226
88299702	0.41260	0.582000	0.259300	0.3103
883263	0.23110	0.315800	0.144500	0.2238
883270	0.24260	0.306400	0.082190	0.1890
88330202	0.37350	0.324100	0.206600	0.2853
88350402	0.12910	0.153300	0.092220	0.2530
883539	0.07776	0.062430	0.040520	0.2901
883852	0.48480	0.743600	0.121800	0.3308
88411702	0.14420	0.135900	0.061060	0.2663
884180	0.29680	0.345800	0.156400	0.2920
884437	0.10260	0.118100	0.067360	0.2883
884448	0.15080	0.229800	0.049700	0.2767
884626	0.58490	0.772700	0.156100	0.2639
88466802	0.13980	0.112500	0.061360	0.3409
884689	0.15820	0.180400	0.096080	0.2664
884948	0.31720	0.699100	0.210500	0.3126
88518501	0.10490	0.081050	0.065440	0.2740
885429	0.59550	0.848900	0.250700	0.2749
8860702	0.24050	0.337800	0.185700	0.3138
886226	0.31610	0.431700	0.199900	0.3379
886452	0.32620	0.320900	0.137400	0.3068
88649001	0.53290	0.425100	0.194100	0.2818
886776	0.45030	0.442900	0.222900	0.3258
887181	0.51720	0.618100	0.246200	0.3277
88725602	0.55640	0.570300	0.201400	0.3512
887549	0.29450	0.378800	0.169700	0.3151
888264	0.14860	0.121100	0.082350	0.2452
888570	0.28670	0.229800	0.152800	0.3067
889403	0.18070	0.226000	0.085680	0.2683
889719	0.25670	0.388900	0.198400	0.3216
88995002	0.26440	0.344200	0.165900	0.2868
8910251	0.25150	0.191600	0.079260	0.2940
8910499	0.17300	0.145300	0.061890	0.2446
8910506	0.18080	0.199200	0.057800	0.3604
8910720	0.25500	0.253400	0.086000	0.2605
8910721	0.05036	0.038660	0.033330	0.2458
8910748	0.15070	0.127500	0.087500	0.2733
8910988	0.47250	0.580700	0.184100	0.2833
8910996	0.09370	0.040430	0.051590	0.2841

8911163	0.18060	0.208000	0.113600	0.2504
8911164	0.08368	0.071530	0.089460	0.2220
8911230	0.07348	0.004955	0.011110	0.2758
8911670	0.11600	0.221000	0.129400	0.2567
8911800	0.07622	0.106000	0.051850	0.2335
8911834	0.17240	0.145600	0.099930	0.2955
8912049	0.38410	0.575400	0.187200	0.3258
8912055	0.08500	0.067350	0.082900	0.3101
89122	0.37490	0.431600	0.225200	0.3590
8912280	0.47060	0.502600	0.173200	0.2770
8912284	0.23170	0.334400	0.101700	0.1999
8912521	0.06624	0.005579	0.008772	0.2505
8912909	0.28130	0.236500	0.115500	0.2465
8913	0.11470	0.118600	0.053660	0.2309
8913049	0.18430	0.154600	0.093140	0.2955
89143601	0.09708	0.075290	0.062030	0.3267
89143602	0.24720	0.222000	0.102100	0.2272
8915	0.30300	0.180400	0.148900	0.2962
891670	0.20680	0.224100	0.105600	0.3380
891703	0.17580	0.131600	0.091400	0.3101
891716	0.14720	0.052330	0.063430	0.2369
891923	0.10720	0.037320	0.058020	0.2823
891936	0.07506	0.028840	0.031940	0.2143
892189	0.07974	0.061200	0.071600	0.1978
892214	0.21670	0.156500	0.075300	0.2636
892399	0.08614	0.041580	0.031250	0.2227
892438	0.41160	0.612100	0.198000	0.2968
892604	0.21580	0.190400	0.076250	0.2685
89263202	0.33910	0.493200	0.192300	0.3294
892657	0.10440	0.084230	0.065280	0.2213
89296	0.17890	0.122600	0.055090	0.2208
893061	0.13610	0.072390	0.048150	0.3244
89344	0.13460	0.011200	0.025000	0.2651
89346	0.05232	0.014720	0.013890	0.2991
893526	0.05836	0.013790	0.022100	0.2267
893548	0.05847	0.018240	0.035320	0.2107
893783	0.10870	0.079150	0.057410	0.3487
89382601	0.07087	0.047460	0.058130	0.2530
89382602	0.22080	0.176900	0.084110	0.2564
893988	0.16260	0.083240	0.047150	0.3390
894047	0.07767	0.000000	0.000000	0.3142
894089	0.04953	0.019380	0.027840	0.1917
894090	0.05332	0.041160	0.018520	0.2293

894326	0.27630	0.385300	0.177600	0.2812
894329	0.37480	0.460900	0.114500	0.3135
894335	0.04712	0.022370	0.028320	0.1901
894604	0.23600	0.189800	0.097440	0.2608
894618	0.15370	0.260600	0.142500	0.3055
894855	0.22310	0.179100	0.115500	0.2382
895100	0.44920	0.534400	0.268500	0.5558
89511501	0.19280	0.116700	0.055560	0.2661
89511502	0.12120	0.102000	0.056020	0.2688
89524	0.11090	0.053070	0.058900	0.2100
895299	0.07390	0.007732	0.027960	0.2171
8953902	0.29470	0.359700	0.158300	0.3103
895633	0.21160	0.334400	0.104700	0.2736
896839	0.44780	0.495600	0.198100	0.3019
896864	0.32530	0.343900	0.098580	0.3596
897132	0.09669	0.013350	0.020220	0.3292
897137	0.09794	0.005518	0.016670	0.2815
897374	0.09052	0.036190	0.039830	0.2554
89742801	0.20530	0.392000	0.182700	0.2623
897604	0.19750	0.145000	0.058500	0.2432
897630	0.48270	0.463400	0.204800	0.3679
897880	0.14020	0.105500	0.064990	0.2894
89812	0.26780	0.481900	0.208900	0.2593
89813	0.33710	0.375500	0.141400	0.3053
898143	0.34160	0.434100	0.081200	0.2982
89827	0.22100	0.229900	0.107500	0.3301
898431	0.34580	0.473400	0.225500	0.4045
89864002	0.11150	0.108700	0.078640	0.2765
898677	0.16360	0.071620	0.040740	0.2434
898678	0.13520	0.045060	0.050930	0.2880
89869	0.20090	0.215100	0.125100	0.3109
898690	0.11200	0.098230	0.065480	0.2851
899147	0.18850	0.031220	0.047660	0.3124
899187	0.06476	0.030460	0.042620	0.2731
899667	0.50460	0.687200	0.213500	0.4245
899987	0.59370	0.645100	0.275600	0.3690
9010018	0.23560	0.402900	0.152600	0.2654
901011	0.12560	0.120100	0.039220	0.2576
9010258	0.20020	0.238800	0.092650	0.2121
9010259	0.26580	0.257300	0.125800	0.3113
901028	0.10080	0.052850	0.055560	0.2362
9010333	0.12480	0.094410	0.047620	0.2434
901034301	0.10490	0.114400	0.050520	0.2454

901034302	0.04327	0.003581	0.016350	0.2233
901041	0.16670	0.121200	0.056140	0.2637
9010598	0.18390	0.125500	0.083120	0.2744
9010872	0.16790	0.166300	0.091230	0.2394
9010877	0.16760	0.136400	0.069870	0.2741
901088	0.23760	0.270200	0.176500	0.2609
9011494	0.34160	0.370300	0.215200	0.3271
9011495	0.21700	0.241300	0.088290	0.3218
9011971	0.16280	0.286100	0.182000	0.2510
9012000	0.38850	0.475600	0.243200	0.2741
9012315	0.46650	0.708700	0.224800	0.4824
9012568	0.17370	0.136200	0.081780	0.2487
9012795	0.28400	0.402400	0.196600	0.2730
901288	0.30550	0.415900	0.211200	0.2689
9013005	0.20960	0.134600	0.069870	0.3323
901303	0.25500	0.211400	0.125100	0.3153
901315	0.36190	0.603000	0.146500	0.2597
9013579	0.14570	0.079340	0.057810	0.2694
9013594	0.31040	0.256900	0.105400	0.3387
9013838	0.93790	0.840200	0.252400	0.4154
901549	0.24290	0.224700	0.131800	0.3343
901836	0.19820	0.155300	0.067540	0.3202
90250	0.32140	0.291200	0.109200	0.2191
90251	0.35930	0.320600	0.098040	0.2819
902727	0.26850	0.286600	0.091730	0.2736
90291	0.15810	0.267500	0.135900	0.2477
902975	0.24310	0.307600	0.091400	0.2677
902976	0.12330	0.109100	0.045370	0.2542
903011	0.28090	0.302100	0.082720	0.2157
90312	0.24140	0.382900	0.182500	0.2576
90317302	0.16500	0.086150	0.066960	0.2937
903483	0.13100	0.000000	0.000000	0.2445
903507	0.39130	0.555300	0.212100	0.3187
903516	0.57170	0.705300	0.242200	0.3828
903554	0.17730	0.160300	0.062660	0.3049
903811	0.12310	0.084600	0.079110	0.2523
90401601	0.25700	0.343800	0.145300	0.2666
90401602	0.18120	0.190100	0.082960	0.1988
904302	0.18790	0.207900	0.055560	0.2590
904357	0.17260	0.144900	0.053560	0.2779
90439701	0.59170	0.903400	0.196400	0.3245
904647	0.15750	0.151400	0.068760	0.2460
904689	0.23180	0.160400	0.066080	0.3207

9047	0.19580	0.181000	0.083880	0.3297
904969	0.06744	0.049210	0.047930	0.2298
904971	0.16440	0.141200	0.078870	0.2251
905189	0.17220	0.231000	0.112900	0.2778
905190	0.19360	0.183800	0.056010	0.2488
90524101	0.37350	0.330100	0.197400	0.3060
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905502	0.16220	0.181100	0.086980	0.2973
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905557	0.33450	0.311400	0.130800	0.3163
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905686	0.21870	0.116400	0.082630	0.3075
905978	0.11930	0.061410	0.037700	0.2872
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906539	0.19370	0.256000	0.066640	0.3035
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906878	0.31670	0.366000	0.140700	0.2744
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907367	0.07094	0.012350	0.025790	0.2349
907409	0.29960	0.293900	0.093100	0.3020
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90769602	0.09605	0.034690	0.036120	0.2165
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908489	0.35680	0.406900	0.182700	0.3179
908916	0.16520	0.071270	0.063840	0.3313
909220	0.12520	0.111700	0.074530	0.2725
909231	0.11410	0.047530	0.058900	0.2513
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909777	0.06542	0.039860	0.022220	0.2699
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9111843	0.18560	0.181100	0.071160	0.2447
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911320502	0.19650	0.187600	0.104500	0.2235
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9113514	0.12550	0.064090	0.025000	0.3057
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9113778	0.15420	0.127700	0.065600	0.3174
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914333	0.13880	0.170000	0.101700	0.2369
914366	0.38420	0.358200	0.140700	0.3230
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90401601	0.07686
90401602	0.07053
904302	0.09158
904357	0.08121
90439701	0.11980
904647	0.07262
904689	0.07247
9047	0.07834
904969	0.05974
904971	0.07732
905189	0.07012
905190	0.08151
90524101	0.08503
905501	0.06896
905502	0.07745
905520	0.07881
905539	0.09206
905557	0.09251
905680	0.06165
905686	0.07351
905978	0.08304
90602302	0.10480
906024	0.09464
906290	0.07123
906539	0.08284
906564	0.09208
906616	0.07427
906878	0.08839
907145	0.08009
907367	0.08061
907409	0.09646
90745	0.07662
90769601	0.07083
90769602	0.06025
907914	0.11550
907915	0.09359
908194	0.08075
908445	0.08314
908469	0.06827

908489	0.10550
908916	0.07735
909220	0.07234
909231	0.06911
909410	0.06710
909411	0.09532
909445	0.07944
90944601	0.06810
909777	0.06736
9110127	0.08225
9110720	0.08251
9110732	0.09075
9110944	0.07285
911150	0.07463
911157302	0.07425
9111596	0.09952
9111805	0.06091
9111843	0.08194
911201	0.07810
911202	0.07330
9112085	0.07675
9112366	0.07220
9112367	0.06788
9112594	0.06291
9112712	0.07211
911296201	0.09060
911296202	0.07427
9113156	0.06464
911320501	0.07863
911320502	0.06925
9113239	0.12490
9113455	0.08174
9113514	0.07875
9113538	0.12240
911366	0.09270
9113778	0.08524
9113816	0.06639
911384	0.08273
9113846	0.06743
911391	0.10800
911408	0.07802
911654	0.07858
911673	0.07698

911685	0.09180
911916	0.09136
912193	0.07729
91227	0.07603
912519	0.09326
912558	0.06960
912600	0.08181
913063	0.10340
913102	0.06596
913505	0.09009
913512	0.08024
913535	0.07623
91376701	0.08203
91376702	0.05871
914062	0.07625
914101	0.07028
914102	0.07429
914333	0.06599
914366	0.10330
914580	0.07661
914769	0.09445
91485	0.08999
914862	0.08549
91504	0.11830
91505	0.07538
915143	0.07277
915186	0.12520
915276	0.13640
91544001	0.08839
91544002	0.11680
915452	0.07230
915460	0.10670
91550	0.09879
915664	0.06142
915691	0.11090
915940	0.07048
91594602	0.06954
916221	0.06783
916799	0.07863
916838	0.09136
917062	0.08893
917080	0.08557
917092	0.08982

91762702	0.09671
91789	0.07613
917896	0.09031
917897	0.09209
91805	0.10490
91813701	0.08665
91813702	0.07592
918192	0.07253
918465	0.08052
91858	0.07757
91903901	0.08950
91903902	0.07782
91930402	0.06386
919537	0.08278
919555	0.07569
91979701	0.08351
919812	0.09970
921092	0.09938
921362	0.10660
921385	0.08134
921386	0.10230
921644	0.06956
922296	0.06443
922297	0.08492
922576	0.06953
922577	0.07399
922840	0.09479
923169	0.07920
923465	0.07626
923748	0.06592
923780	0.08032
924084	0.06484
924342	0.07393
924632	0.07242
924934	0.08283
924964	0.06742
925236	0.06969
925277	0.08004
925291	0.08732
925292	0.08321
925311	0.05905
925622	0.14090
926125	0.09873

```
926424                  0.07115
926682                  0.06637
926954                  0.07820
927241                  0.12400
92751                   0.07039
```

```
fna.data <- "WisconsinCancer.csv"
wisc.df <- read.csv(fna.data, row.names=1)
```

Q1: How many observations are in the data set? 569 observations total adding both the malignant and benign samples. Q2: How many of the observations have a malignant diagnosis? 212 see result of two codes below

```
table(wisc.df$diagnosis)
```

```
  B   M
357 212
```

```
sum(wisc.df$diagnosis == "M")
```

```
[1] 212
```

Q3: How many variables/features in the data are suffixed with _mean? 10 are suffixed with mean as seen with the codes below.

```
colnames(wisc.df)
```

```
 [1] "diagnosis"               "radius_mean"
 [3] "texture_mean"            "perimeter_mean"
 [5] "area_mean"               "smoothness_mean"
 [7] "compactness_mean"        "concavity_mean"
 [9] "concave.points_mean"     "symmetry_mean"
[11] "fractal_dimension_mean"  "radius_se"
[13] "texture_se"              "perimeter_se"
[15] "area_se"                 "smoothness_se"
[17] "compactness_se"          "concavity_se"
[19] "concave.points_se"       "symmetry_se"
[21] "fractal_dimension_se"    "radius_worst"
[23] "texture_worst"           "perimeter_worst"
[25] "area_worst"              "smoothness_worst"
```

```
[27] "compactness_worst"       "concavity_worst"
[29] "concave.points_worst"    "symmetry_worst"
[31] "fractal_dimension_worst"
```

```
length( grep("mean", colnames(wisc.df), value=T))
```

```
[1] 10
```

There is a diagnosis column that is in the clinician consensus that I want to exclude from any further analysis. We will come back later and compare our results to this diagnosis.

```
diagnosis <- as.factor(wisc.df$diagnosis)
head(diagnosis)
```

```
[1] M M M M M M
Levels: B M
```

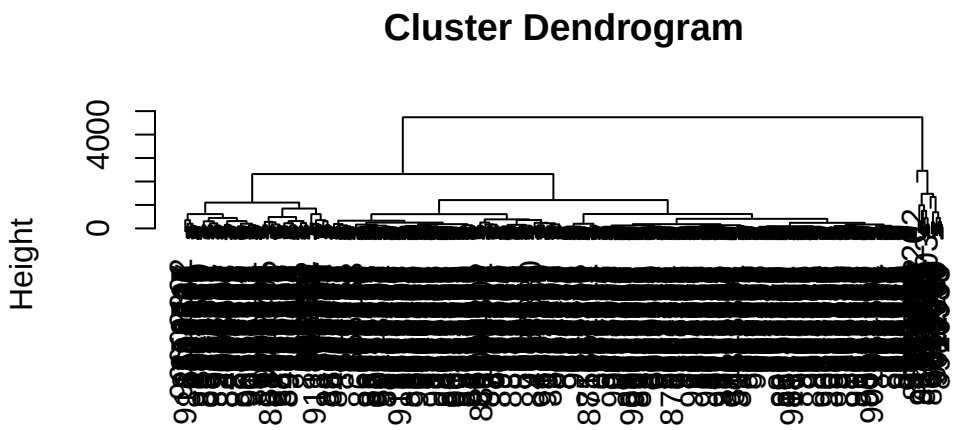
Now we can remove it from the `wisc.df`

```
wisc.data <- wisc.df[,-1]
```

Clustering

Let's try a `hclust()`

```
hc <- hclust( dist(wisc.data))
plot(hc)
```



We can extract clusters from this rather poor dendrogram/tree with the `cutree()` function.

```
grps <- cutree(hc, k=2)
```

How many elements are in each cluster?

```
table(grps)
```

```
grps
  1   2
549  20
```

We can generate a cross-table that compares our cluster `grps` vector with out `diagnosis` vector values.

```
table(diagnosis, grps)
```

```
         grps
diagnosis   1   2
        B 357   0
        M 192  20
```

PCA: Principal Component Analysis

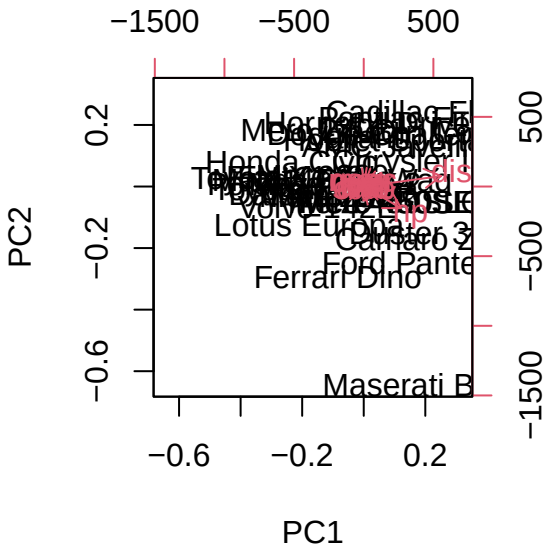
The main function for PCA in base R in`prcomp()` it has a default input paramater of `scale=FALSE`.

```
#prcomp()
head(mtcars)
```

```
                   mpg cyl disp  hp drat    wt  qsec vs am gear carb
Mazda RX4         21.0   6  160 110 3.90 2.620 16.46  0  1    4    4
Mazda RX4 Wag     21.0   6  160 110 3.90 2.875 17.02  0  1    4    4
Datsun 710        22.8   4  108  93 3.85 2.320 18.61  1  1    4    1
Hornet 4 Drive    21.4   6  258 110 3.08 3.215 19.44  1  0    3    1
Hornet Sportabout 18.7   8  360 175 3.15 3.440 17.02  0  0    3    2
Valiant           18.1   6  225 105 2.76 3.460 20.22  1  0    3    1
```

We could just do PCA of this data as is, and it could be mis-leading.

```
pc <- prcomp(mtcars)
biplot(pc)
```



Let's look at the mean values of each column and the standard deviation.

```
colMeans(mtcars)
```

```
      mpg       cyl      disp        hp      drat        wt      qsec
20.090625  6.187500 230.721875 146.687500  3.596563  3.217250 17.848750
       vs        am      gear      carb
 0.437500  0.406250  3.687500  2.812500
```

```
apply(mtcars, 2, sd)
```

```
       mpg        cyl       disp         hp       drat         wt
 6.0269481  1.7859216 123.9386938 68.5628685  0.5346787  0.9784574
      qsec         vs         am       gear       carb
 1.7869432  0.5040161  0.4989909  0.7378041  1.6152000
```

We can "scale" this data before PCA to get a much better representation and analysis of all the columns.

```
mtscale <- scale(mtcars)
```

```
round(colMeans(mtscale))
```

```
 mpg  cyl disp   hp drat   wt qsec   vs   am gear carb
   0    0    0    0    0    0    0    0    0    0    0
```

```
apply(mtscale, 2, sd)
```

```
 mpg  cyl disp   hp drat   wt qsec   vs   am gear carb
   1    1    1    1    1    1    1    1    1    1    1
```

```
pc.scale <- prcomp(mtscale)
```

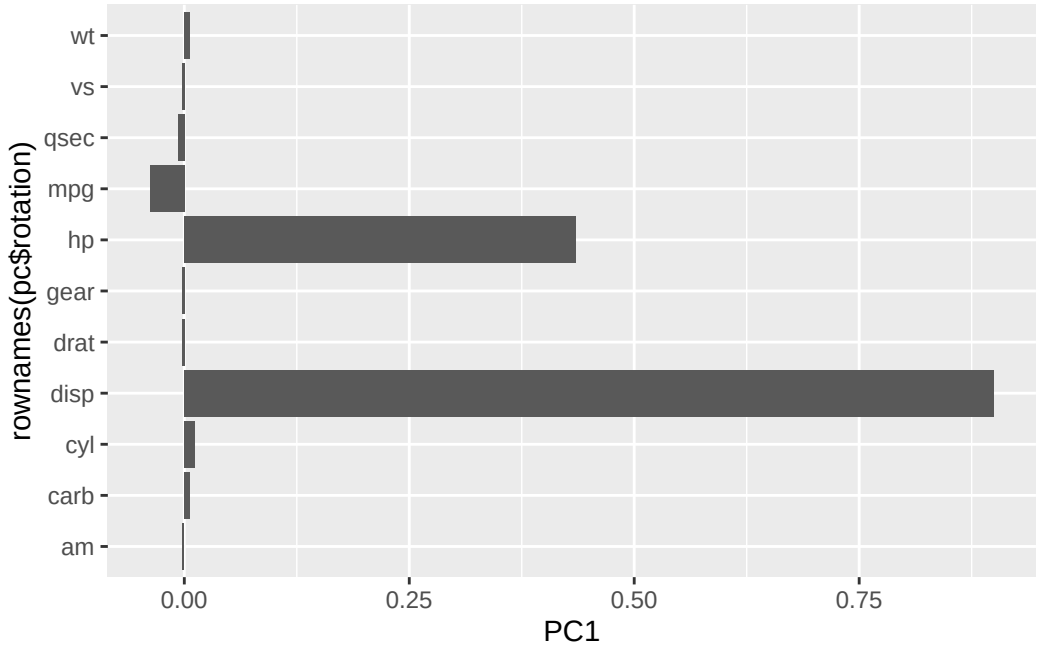
We can look at the two main results figures from PCA - the "PC plot" (a.k.a score plot, ordination plot, or PC1 vs PC2 plot). The "loadings plot" how the original variables contribute to the new PCs.

The Importance of Scaling

A loadings plot of the unscaled PCA results

```
library(ggplot2)

ggplot(pc$rotation)+
  aes(PC1, rownames(pc$rotation)) +
  geom_col()
```



Largest standard deviation will be father away from the accounted variation/line of best fit best estimated by PC1.

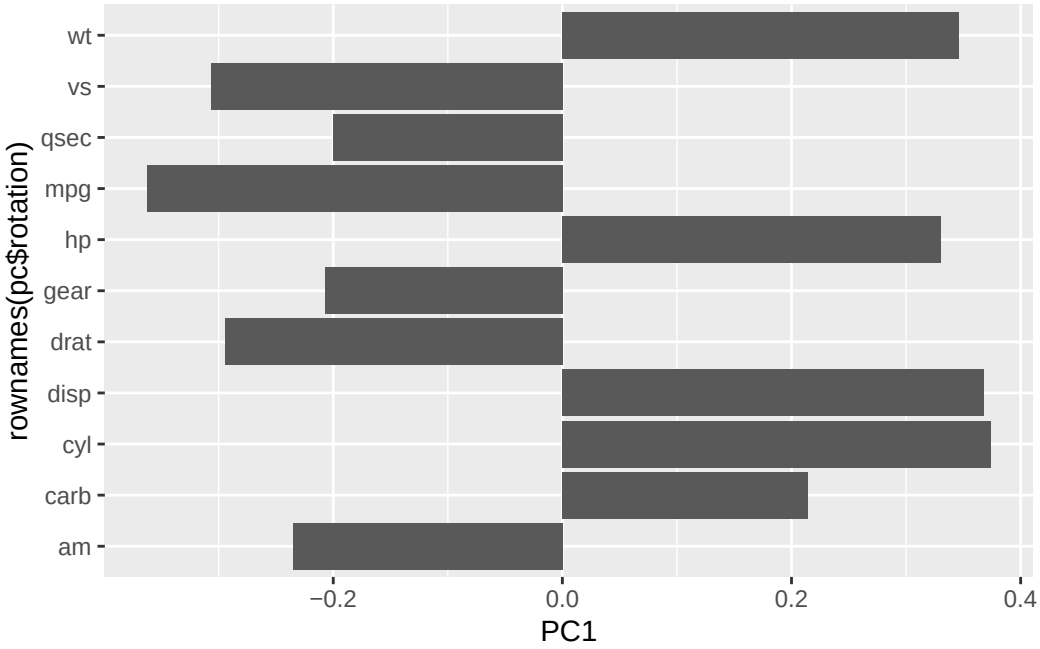
```
pc$rotation
```

```
              PC1          PC2          PC3          PC4         PC5
mpg  -0.038118199  0.009184847  0.982070847  0.047634784 -0.08832843
cyl   0.012035150 -0.003372487 -0.063483942 -0.227991962  0.23872590
disp  0.899568146  0.435372320  0.031442656 -0.005086826 -0.01073597
hp    0.434784387 -0.899307303  0.025093049  0.035715638  0.01655194
drat -0.002660077 -0.003900205  0.039724928 -0.057129357 -0.13332765
wt    0.006239405  0.004861023 -0.084910258  0.127962867 -0.24354296
qsec -0.006671270  0.025011743 -0.071670457  0.886472188 -0.21416101
vs   -0.002729474  0.002198425  0.004203328  0.177123945 -0.01688851
am   -0.001962644 -0.005793760  0.054806391 -0.135658793 -0.06270200
gear -0.002604768 -0.011272462  0.048524372 -0.129913811 -0.27616440
```

```
carb  0.005766010 -0.027779208 -0.102897231 -0.268931427 -0.85520810
              PC6          PC7           PC8          PC9         PC10
mpg  -0.143790084 -0.039239174 -2.271040e-02 -0.002790139  0.030630361
cyl  -0.793818050  0.425011021  1.890403e-01  0.042677206  0.131718534
disp  0.007424138  0.000582398  5.841464e-04  0.003532713 -0.005399132
hp    0.001653685 -0.002212538 -4.748087e-06 -0.003734085  0.001862554
drat  0.227229260  0.034847411  9.385817e-01 -0.014131110  0.184102094
wt   -0.127142296 -0.186558915 -1.561907e-01 -0.390600261  0.829886844
qsec -0.189564973  0.254844548  1.028515e-01 -0.095914479 -0.204240658
vs    0.102619063 -0.080788938  2.132903e-03  0.684043835  0.303060724
am    0.205217266  0.200858874  2.273255e-02 -0.572372433 -0.162808201
gear  0.334971103  0.801625551 -2.174878e-01  0.156118559  0.203540645
carb -0.283788381 -0.165474186 -3.972219e-03  0.127583043 -0.239954748
              PC11
mpg   0.0158569365
cyl  -0.1454453628
disp -0.0009420262
hp    0.0021526102
drat  0.0973818815
wt    0.0198581635
qsec -0.0110677880
vs   -0.6256900918
am   -0.7331658036
gear  0.1909325849
carb -0.0557957968
```

Loadings plot of the scaled data.

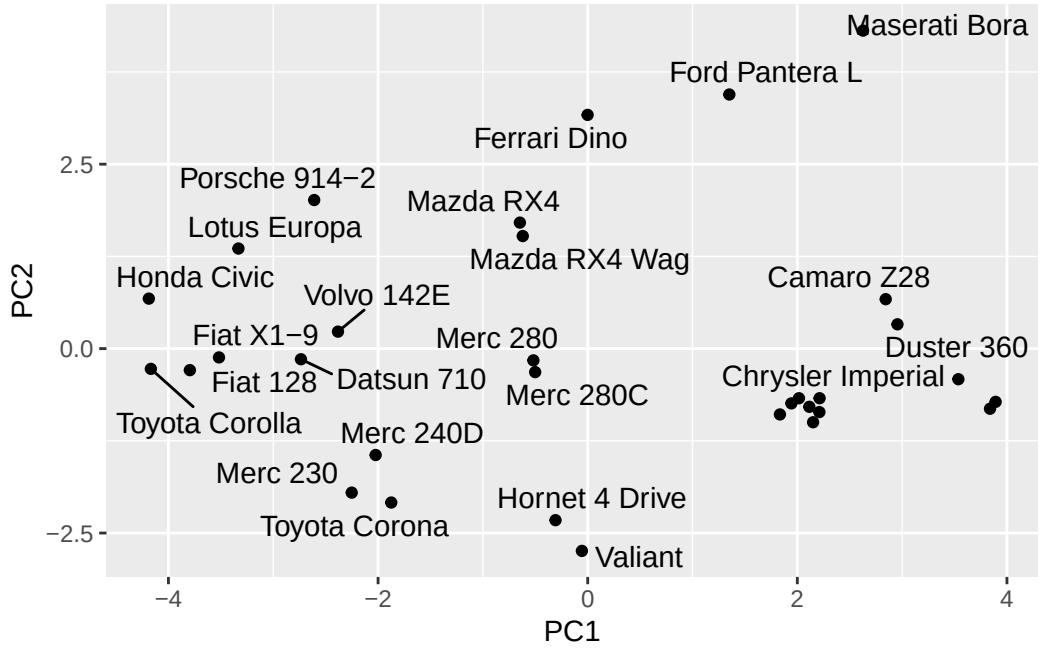
```
ggplot(pc.scale$rotation)+
  aes(PC1, rownames(pc$rotation)) +
  geom_col()
```



This will pick up more columns and is a much better representation of the variation. PC plot of scaled PCA results

```
library(ggrepel)
ggplot(pc.scale$x)+
  aes(PC1, PC2, label=rownames(pc.scale$x))+
  geom_point() +
  geom_text_repel()
```

```
Warning: ggrepel: 9 unlabeled data points (too many overlaps). Consider
increasing max.overlaps
```




```
geom_text_repel(max.overlaps = Inf)
```

```
geom_text_repel: parse = FALSE, na.rm = FALSE, box.padding = 0.25, point.padding = 1e-06, mi
stat_identity: na.rm = FALSE
position_identity
```

> *__Key point__: In general, we will set `scale=TRUE` when we do PCA. This is not the default but probably should be.

We can check the SD and mean of the different columns in `wisc.data` to see if we need to scale - hint: we do!

PCA of wisc.data

```
wisc.pr <- prcomp(wisc.data, scale=TRUE)
```

To see how well PCA is doing here in terms of capturing the variance (or spread) in the data we can use the `summary()` function.

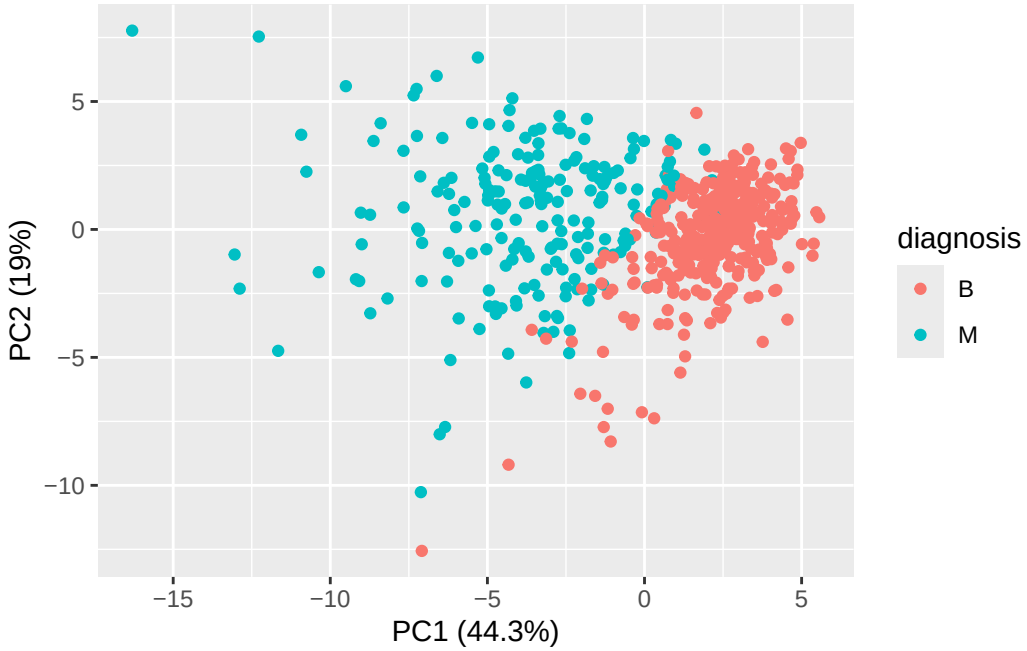
```
summary(wisc.pr)
```

```
Importance of components:
                          PC1    PC2     PC3     PC4     PC5     PC6     PC7
Standard deviation     3.6444 2.3857 1.67867 1.40735 1.28403 1.09880 0.82172
Proportion of Variance 0.4427 0.1897 0.09393 0.06602 0.05496 0.04025 0.02251
Cumulative Proportion  0.4427 0.6324 0.72636 0.79239 0.84734 0.88759 0.91010
                           PC8    PC9    PC10   PC11    PC12    PC13    PC14
Standard deviation     0.69037 0.6457 0.59219 0.5421 0.51104 0.49128 0.39624
Proportion of Variance 0.01589 0.0139 0.01169 0.0098 0.00871 0.00805 0.00523
Cumulative Proportion  0.92598 0.9399 0.95157 0.9614 0.97007 0.97812 0.98335
                          PC15    PC16    PC17    PC18    PC19    PC20   PC21
Standard deviation     0.30681 0.28260 0.24372 0.22939 0.22244 0.17652 0.1731
Proportion of Variance 0.00314 0.00266 0.00198 0.00175 0.00165 0.00104 0.0010
Cumulative Proportion  0.98649 0.98915 0.99113 0.99288 0.99453 0.99557 0.9966
                          PC22    PC23   PC24    PC25    PC26    PC27    PC28
Standard deviation     0.16565 0.15602 0.1344 0.12442 0.09043 0.08307 0.03987
Proportion of Variance 0.00091 0.00081 0.0006 0.00052 0.00027 0.00023 0.00005
Cumulative Proportion  0.99749 0.99830 0.9989 0.99942 0.99969 0.99992 0.99997
                          PC29    PC30
Standard deviation     0.02736 0.01153
Proportion of Variance 0.00002 0.00000
Cumulative Proportion  1.00000 1.00000
```

Cumulative proportion accounts for the amount of variation is accounted for by the summed PCA components of the data.

Let's make the main PC1 vs PC2 figure

```
ggplot(wisc.pr$x)+
  aes(PC1,PC2,col=diagnosis) +
  geom_point() +
  xlab("PC1 (44.3%)") +
  ylab("PC2 (19%)")
```



PCA attempts to flatten data. Points on end best represent PC1. Answer Questions 4-7 (Answer up to this Question 10)

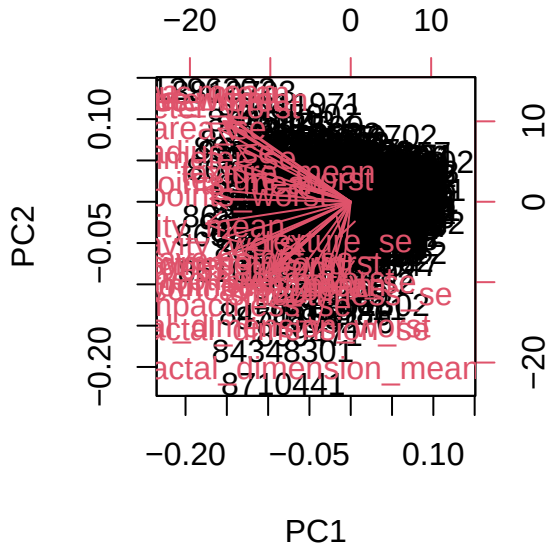
Q4: From your results, what proportion of the original variance is captured by the first principal components (PC1)? The first principal component captures about 44.27% of the variation in the entire data.

Q5: How many principal components (PCs) are required to describe at least 70% of the original variance in the data? Three Principal components are required to capture at least 70% of the data of the variation, where the accumulation of PC1-3 accounts for just over 72% of the variation.

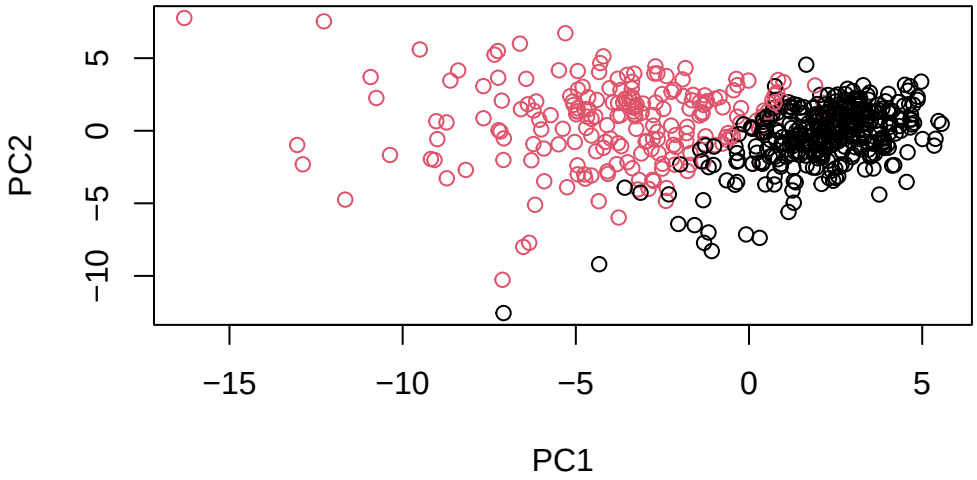
Q6: How many principal components (PCs) are required to describe at least 90% of the original variance in the data? To capture at least 90% of the variation in the data, at least 7 principal components are required up to PC7.

Q7: What stands out to you about this plot? Is it easy or difficult to understand? Why? This biplot below is very difficult to understand and does not allow us to visualize clear separation between the malignant and tumor samples across the plot. The two clusters appear heavily overlapped to the point where it appears one is nested into the other. The labeling further adds confusion to the plot and could not be used by a medical professional to clearly differentiate between the malignant and benign tumor samples.

```
biplot(wisc.pr)
```

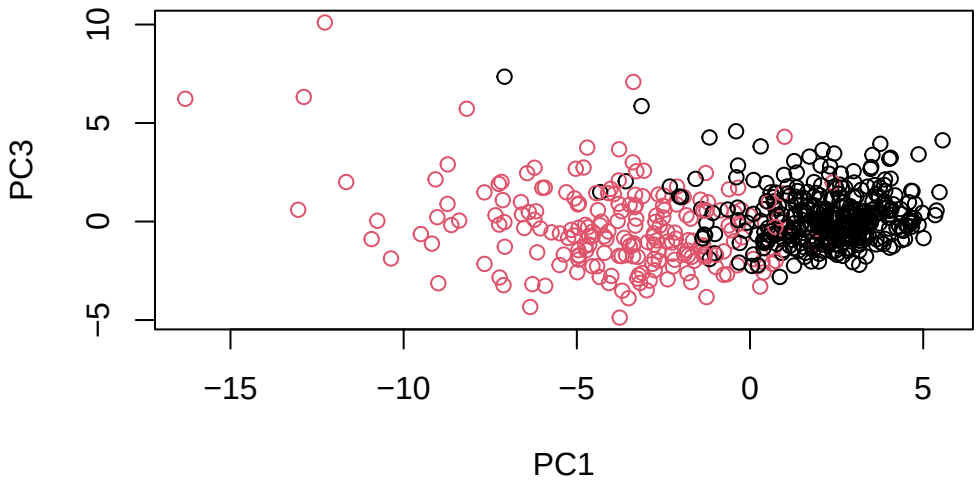



```
plot(wisc.pr$x[, 1:2], col = diagnosis, xlab = "PC1", ylab = "PC2")
```



Here, generating a plot for PC1 vs. PC2 reveals much more clarity in the separation of clusters between malignant and benign. Let's do the same comparing PC1 and PC3.

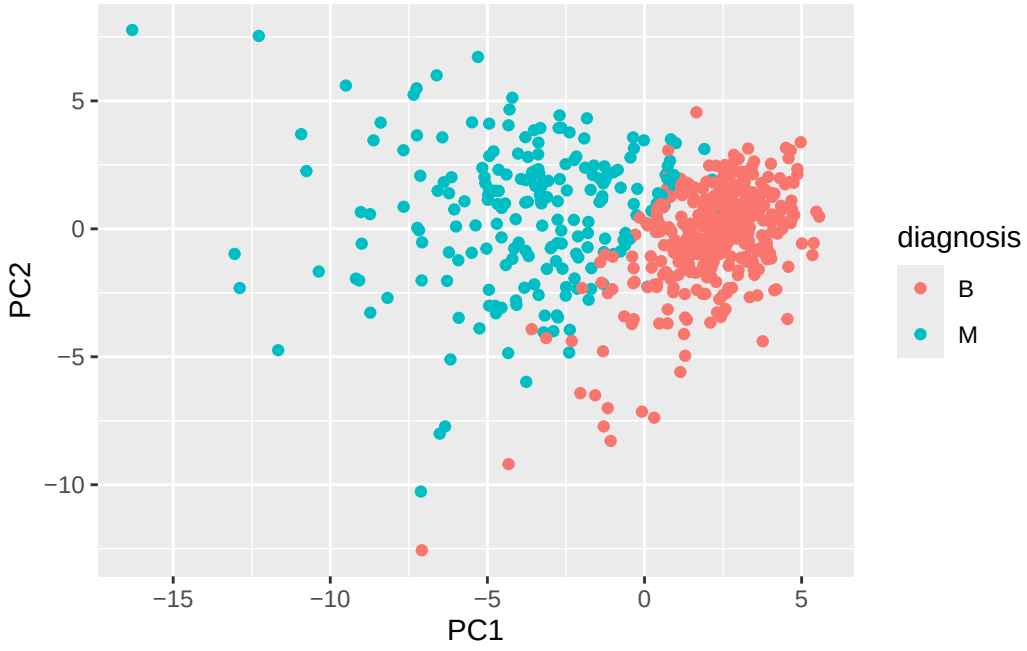
```
plot(wisc.pr$x[, c(1, 3)],
     col = diagnosis,
     xlab = "PC1",
     ylab = "PC3")
```



Q8: Generate a similar plot for principal components 1 and 3. What do you notice about these plots? Looking at the plot comparing PC1 and PC2, it appears that we see a very clearly defined separation between the malignant and benign samples with very little overlap between the dark red and black regions. However, when looking at the plot between PC3 and PC1, it appears there is more overlap between the malignant and benign clusters, where at the interface between the two clusters, there appears many overlapping black and red circles. This phenomena can be explained by the fact that PC2 accounts for more variation in the data set than PC3, and thus when clusters are created using principal component analysis and the data is mapped onto these eigenvectors, when PC1 and PC2 are plotted, which account for the most variation in the data, there appears more defined grouping, while when PC3 is introduced, which explains less variation in the data, less defined grouping occurs, with more overlap as seen in the figure above.

Let's try using ggplot 2 to make things more clearer.

```
df <- as.data.frame(wisc.pr$x)
df$diagnosis <- diagnosis
library(ggplot2)
ggplot(df) +
  aes(PC1, PC2, col=diagnosis) +
  geom_point()
```

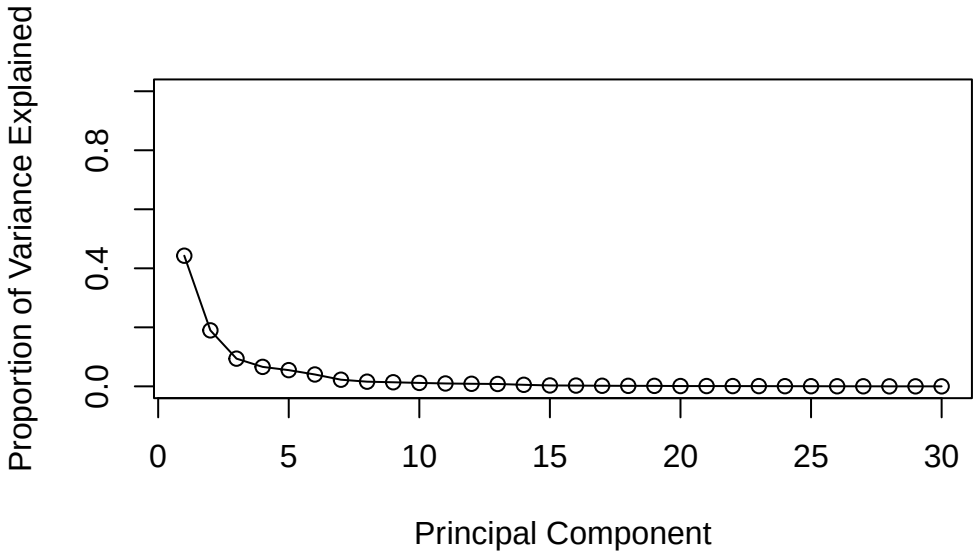



```
pr.var <- wisc.pr$sdev^2
head(pr.var)
```

```
[1] 13.281608  5.691355  2.817949  1.980640  1.648731  1.207357
```

This helps output the variance of each of the principal components to describe the wisc. pr data where the variance is defined as the square of the standard deviation. The head PR in this case only outputs the top 6 values from the PC components.

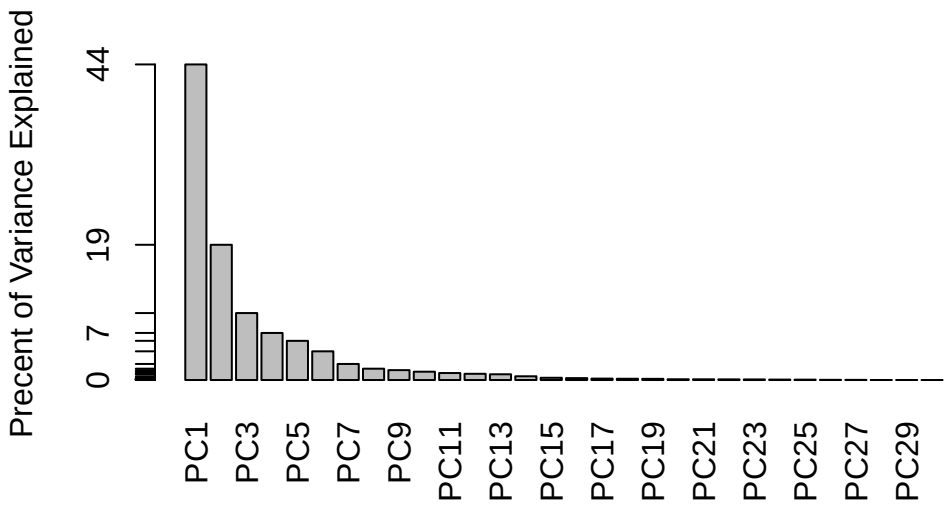
```
total.var <- sum(pr.var)
pve <- pr.var / total.var
plot(pve, xlab = "Principal Component",
     ylab = "Proportion of Variance Explained",
     ylim = c(0, 1), type = "o")
```



Here we can see a graph showing the relative explanation of the variance in the data captured by each of the principal components. The smaller the principal component i.e PC1, the more variance captured.

Below is an alternative display:

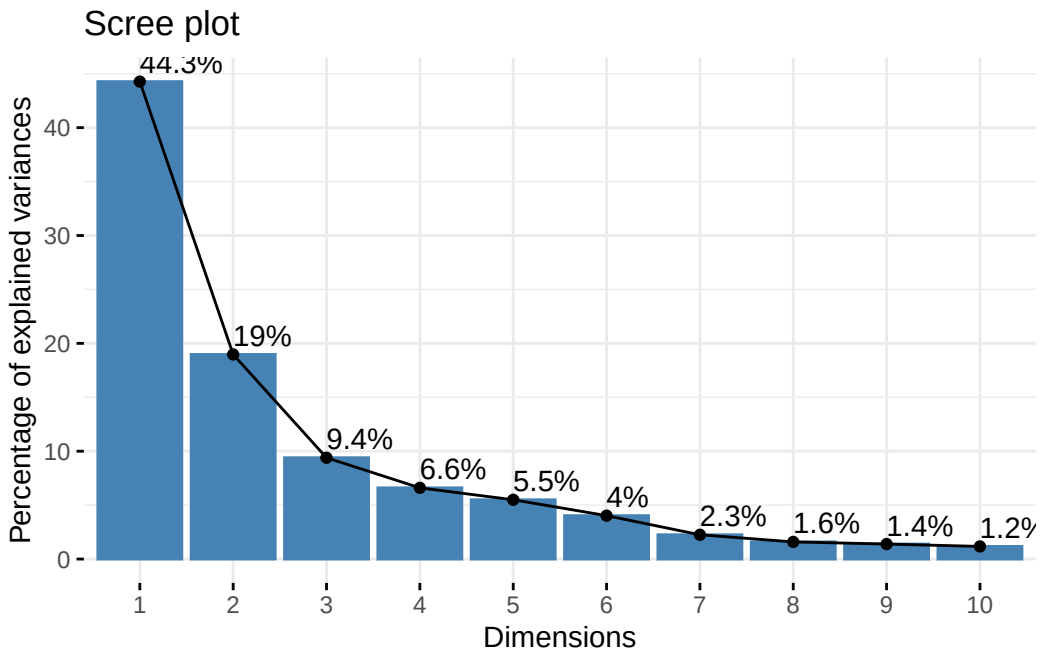
```
barplot(pve, ylab = "Precent of Variance Explained",
     names.arg=paste0("PC",1:length(pve)), las=2, axes = FALSE)
axis(2, at=pve, labels=round(pve,2)*100 )
```




```
library(factoextra)
```

```
Welcome! Want to learn more? See two factoextra-related books at https://goo.gl/ve3WBa
```

```
fviz_eig(wisc.pr, addlabels = TRUE)
```



Many different factors impact the malignant and benign separation. ## Combining Methods

We can take our PCA results and use them as a basis set for other anlysis such as clustering.

> Q9: For the first principal component, what is the component of the loading vector (i.e. wisc.pr$rotation[,1]) for the feature concave.points_mean? In this code, for the columns component we extracted out PC1, and the numeric output from this code will indicate how strongly the concave.points_mean will contribute to the PC1 component. In this case, the value outputed is -0.260853, which indicates somewhat contribution of this value, and thus this value is the component of the loading vector i.e the amount of contribution to PC1.

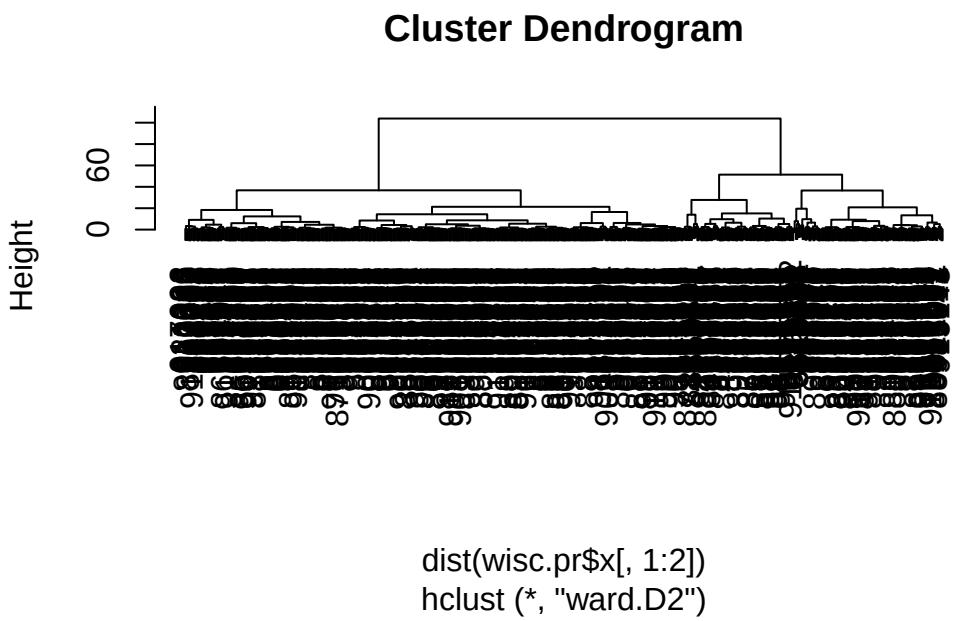
> Q10: Q10. What is the minimum number of principal components required to explain 80% of the variance of the data? Looking at the graph directly above, it appears that it requires at least 4 principal components up to PC4 to explain 80% of the data.

```
wisc.pr$rotation["concave.points_mean", 1]
```

```
[1] -0.2608538
```

CLustering on PCA results

```
wisc.pr.hclust <- hclust( dist(wisc.pr$x[,1:2]), method="ward.D2")
plot(wisc.pr.hclust)
```



We can "cut" this tree to yield our clusters (groups):

```
pc.grps <- cutree(wisc.pr.hclust, k=2)
table(pc.grps)
```

```
pc.grps
  1   2
195 374
```

How do my cluster groups compare to the expert diagnosis

```
table(diagnosis, pc.grps)
```

```
         pc.grps
diagnosis   1   2
        B  18 339
        M 177  35
```

```
table(diagnosis)
```

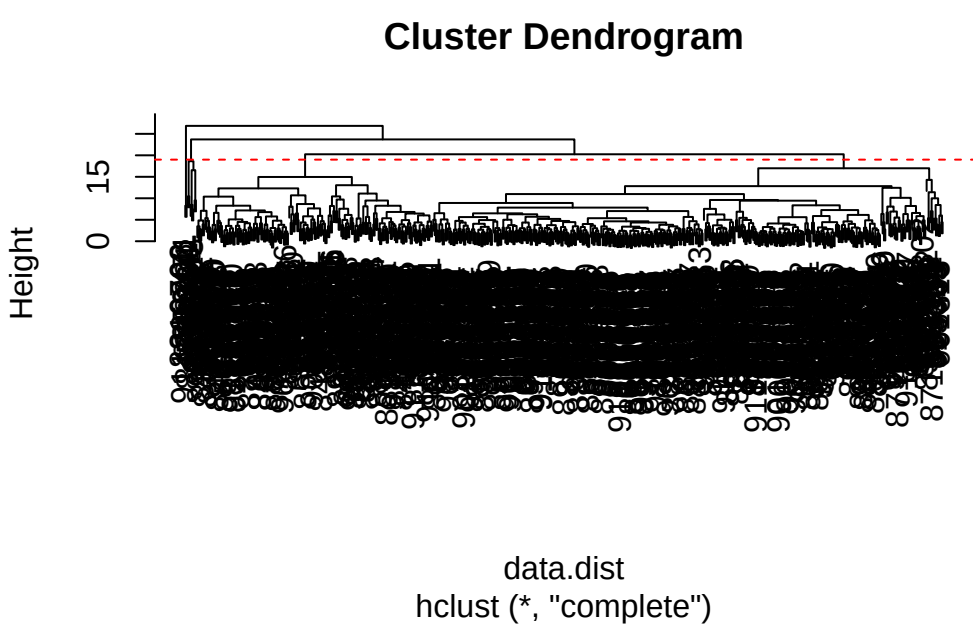
```
diagnosis
  B   M
357 212
```

```
data.scaled <- scale(wisc.data)
```

```
data.dist <- dist(data.scaled)
```

```
wisc.hclust <- hclust(data.dist, method="complete")
```

```
plot(wisc.hclust)
abline(h=19,col="red",lty=2)
```




```
cutree(wisc.hclust, k=4)
```

```
   842302    842517  84300903  84348301  84358402    843786    844359  84458202
        1         1         1         2         1         1         1         1
   844981  84501001    845636  84610002    846226    846381  84667401  84799002
```

1	2	3	1	1	3	1	1
848406	84862001	849014	8510426	8510653	8510824	8511133	851509
3	1	1	3	3	3	1	1
852552	852631	852763	852781	852973	853201	853401	853612
1	1	1	1	1	3	1	1
85382601	854002	854039	854253	854268	854941	855133	855138
1	1	1	1	1	3	3	1
855167	855563	855625	856106	85638502	857010	85713702	85715
3	1	1	1	1	1	3	1
857155	857156	857343	857373	857374	857392	857438	85759902
3	3	3	3	3	1	3	3
857637	857793	857810	858477	858970	858981	858986	859196
1	1	3	3	3	3	1	3
85922302	859283	859464	859465	859471	859487	859575	859711
1	1	3	3	2	3	1	3
859717	859983	8610175	8610404	8610629	8610637	8610862	8610908
1	1	3	3	3	1	2	3
861103	8611161	8611555	8611792	8612080	8612399	86135501	86135502
3	1	1	1	3	1	3	1
861597	861598	861648	861799	861853	862009	862028	86208
3	1	3	3	3	3	1	1
86211	862261	862485	862548	862717	862722	862965	862980
3	3	3	3	3	3	3	3
862989	863030	863031	863270	86355	864018	864033	86408
3	1	1	3	1	3	3	3
86409	864292	864496	864685	864726	864729	864877	865128
3	3	3	3	3	1	1	3
865137	86517	865423	865432	865468	86561	866083	866203
3	1	2	3	3	3	1	3
866458	866674	866714	8670	86730502	867387	867739	868202
1	1	3	1	1	3	1	3
868223	868682	868826	868871	868999	869104	869218	869224
3	3	1	3	3	3	3	3
869254	869476	869691	86973701	86973702	869931	871001501	871001502
3	3	1	3	3	3	3	3
8710441	87106	8711002	8711003	8711202	8711216	871122	871149
2	3	3	3	1	3	3	3
8711561	8711803	871201	8712064	8712289	8712291	87127	8712729
3	1	1	3	1	3	3	3
8712766	8712853	87139402	87163	87164	871641	871642	872113
1	3	3	3	1	3	3	3
872608	87281702	873357	873586	873592	873593	873701	873843
3	1	3	3	1	1	1	3

873885	874158	874217	874373	874662	874839	874858	875093
1	3	3	3	3	3	2	3
875099	875263	87556202	875878	875938	877159	877486	877500
3	1	1	3	1	3	1	1
877501	877989	878796	87880	87930	879523	879804	879830
3	3	1	1	3	3	3	3
8810158	8810436	881046502	8810528	8810703	881094802	8810955	8810987
1	3	1	3	4	3	1	1
8811523	8811779	8811842	88119002	8812816	8812818	8812844	8812877
3	3	1	1	3	3	3	1
8813129	88143502	88147101	88147102	88147202	881861	881972	88199202
3	3	3	3	3	1	1	3
88203002	88206102	882488	88249602	88299702	883263	883270	88330202
3	1	3	3	1	1	3	1
88350402	883539	883852	88411702	884180	884437	884448	884626
3	3	3	3	1	3	3	3
88466802	884689	884948	88518501	885429	8860702	886226	886452
3	3	1	3	1	3	1	3
88649001	886776	887181	88725602	887549	888264	888570	889403
1	1	1	1	1	3	1	3
889719	88995002	8910251	8910499	8910506	8910720	8910721	8910748
1	1	3	3	3	3	3	3
8910988	8910996	8911163	8911164	8911230	8911670	8911800	8911834
1	3	3	3	3	3	3	3
8912049	8912055	89122	8912280	8912284	8912521	8912909	8913
1	3	1	1	3	3	3	3
8913049	89143601	89143602	8915	891670	891703	891716	891923
3	3	3	3	3	3	3	3
891936	892189	892214	892399	892438	892604	89263202	892657
3	3	3	3	1	3	1	3
89296	893061	89344	89346	893526	893548	893783	89382601
3	3	3	3	3	3	3	3
89382602	893988	894047	894089	894090	894326	894329	894335
3	3	3	3	3	1	3	3
894604	894618	894855	895100	89511501	89511502	89524	895299
3	3	3	1	3	3	3	3
8953902	895633	896839	896864	897132	897137	897374	89742801
1	1	1	1	3	3	3	1
897604	897630	897880	89812	89813	898143	89827	898431
3	1	3	1	3	3	3	1
89864002	898677	898678	89869	898690	899147	899187	899667
3	3	3	3	3	3	3	1
899987	9010018	901011	9010258	9010259	901028	9010333	901034301

1	1	3	3	3	3	3	3
901034302	901041	9010598	9010872	9010877	901088	9011494	9011495
3	3	3	3	3	1	1	3
9011971	9012000	9012315	9012568	9012795	901288	9013005	901303
1	1	1	3	1	1	3	3
901315	9013579	9013594	9013838	901549	901836	90250	90251
3	3	3	1	3	3	3	3
902727	90291	902975	902976	903011	90312	90317302	903483
3	3	3	3	3	1	3	3
903507	903516	903554	903811	90401601	90401602	904302	904357
1	1	3	3	3	3	3	3
90439701	904647	904689	9047	904969	904971	905189	905190
1	3	3	3	3	3	3	3
90524101	905501	905502	905520	905539	905557	905680	905686
1	3	3	3	3	3	3	3
905978	90602302	906024	906290	906539	906564	906616	906878
3	1	3	3	3	1	3	3
907145	907367	907409	90745	90769601	90769602	907914	907915
3	3	3	3	3	3	1	3
908194	908445	908469	908489	908916	909220	909231	909410
1	1	3	1	3	3	3	3
909411	909445	90944601	909777	9110127	9110720	9110732	9110944
3	3	3	3	3	3	1	3
911150	911157302	9111596	9111805	9111843	911201	911202	9112085
3	1	3	1	3	3	3	3
9112366	9112367	9112594	9112712	911296201	911296202	9113156	911320501
3	3	3	3	1	4	3	3
911320502	9113239	9113455	9113514	9113538	911366	9113778	9113816
3	3	3	3	1	1	3	3
911384	9113846	911391	911408	911654	911673	911685	911916
3	3	3	3	3	3	3	1
912193	91227	912519	912558	912600	913063	913102	913505
3	3	3	3	3	3	3	1
913512	913535	91376701	91376702	914062	914101	914102	914333
3	3	3	3	1	3	3	3
914366	914580	914769	91485	914862	91504	91505	915143
1	3	1	1	3	1	3	1
915186	915276	91544001	91544002	915452	915460	91550	915664
3	3	3	3	3	1	3	3
915691	915940	91594602	916221	916799	916838	917062	917080
1	3	3	3	1	1	3	3
917092	91762702	91789	917896	917897	91805	91813701	91813702
3	1	3	3	3	3	1	3

```
   918192    918465     91858  91903901  91903902  91930402    919537    919555
        3         3         3         3         3         1         3         1
 91979701    919812    921092    921362    921385    921386    921644    922296
        3         1         3         3         3         1         3         3
   922297    922576    922577    922840    923169    923465    923748    923780
        3         3         3         3         3         3         3         3
   924084    924342    924632    924934    924964    925236    925277    925291
        3         3         3         3         3         3         3         3
   925292    925311    925622    926125    926424    926682    926954    927241
        3         3         1         1         1         1         3         1
    92751
        3
```

Q11: Using the plot() and abline() functions, what is the height at which the clustering model has 4 clusters? Referncing the lab handout sheet and the figure above, when the tree was cut at around a height of 19, it appears that 4 major clusters appear with multiple data points, consistent with the two sheets.

```
wisc.hclust.clusters <- cutree(wisc.hclust, k=4)
```

```
table(wisc.hclust.clusters, diagnosis)
```

```
                    diagnosis
wisc.hclust.clusters   B   M
                   1  12 165
                   2   2   5
                   3 343  40
                   4   0   2
```

Here, after dividing into 4 clusters we can see clusters 1 and 3 have the most benign or malignant cases while the other two have very little in both. > Q12. Can you find a better cluster vs diagnoses match by cutting into a different number of clusters between 2 and 10? Yes we can find a better cluster versus diagnosis match by dividing into 5 clusters, as seen below where for each cluster there is a clear majority of either malignant or benign. Looking at clusters 1 and 3, these show majority malignant and benign, respectively, exactly identical to the numbers seen in cluster 4. However, the other few cases with cluster 2 and 4 are better spread out among the additional cluster, to the point where they are either all benign or all malignant, as seen in rows 2, 4 and 5 below. This makes a great separation of the malignant and benign samples among the clusters better than when k=4. When k was set to 3 or 2, it was clearly seen that there was one row where there was a large amount of both benign and malignant, ensuring not great separation. k=6 was also a good separation and is debatable with the k=5 separation, the only difference being the slighltly less benign in row 3 and the

12:1 B:M seen in row 5, which is not as good as the complete separation we saw in those other rows for k=5. As k increased even more, the malignant samples began to spread over multiple rows more and more evenly, which was not as great of a separation as k=5.

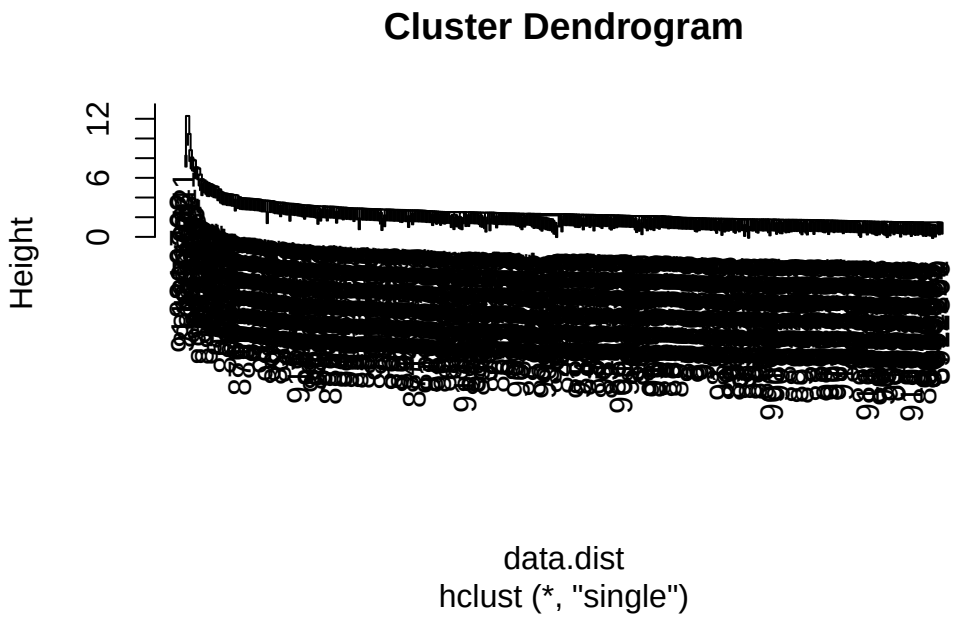
```
wisc.hclust.clusterss <- cutree(wisc.hclust, k=5)
```

```
table(wisc.hclust.clusterss, diagnosis)
```

```
                    diagnosis
wisc.hclust.clusterss   B   M
                    1  12 165
                    2   0   5
                    3 343  40
                    4   2   0
                    5   0   2
```

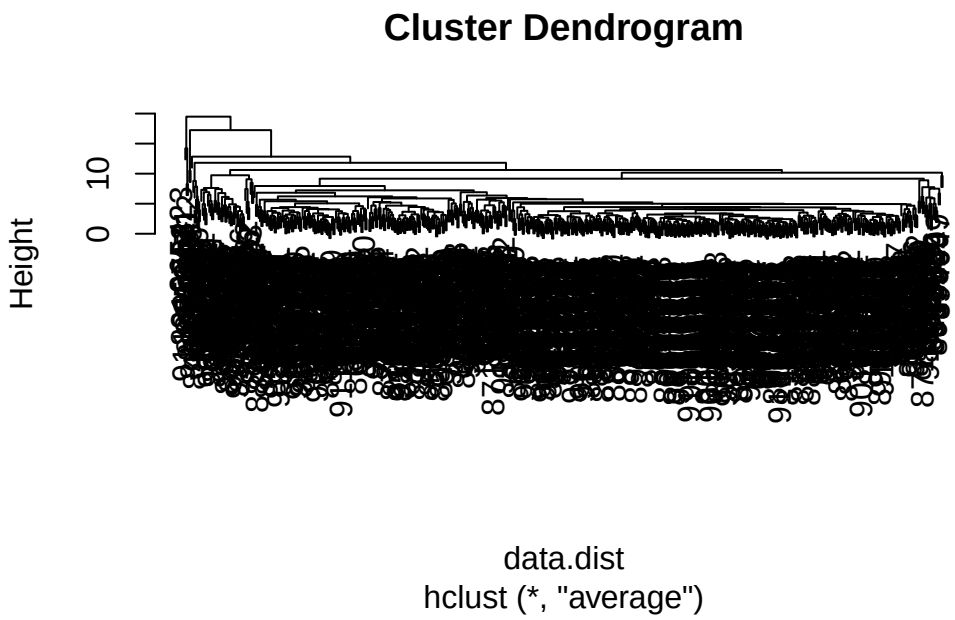
```
wisc.hclustt <- hclust(data.dist, method="single")
```

```
plot(wisc.hclustt)
```



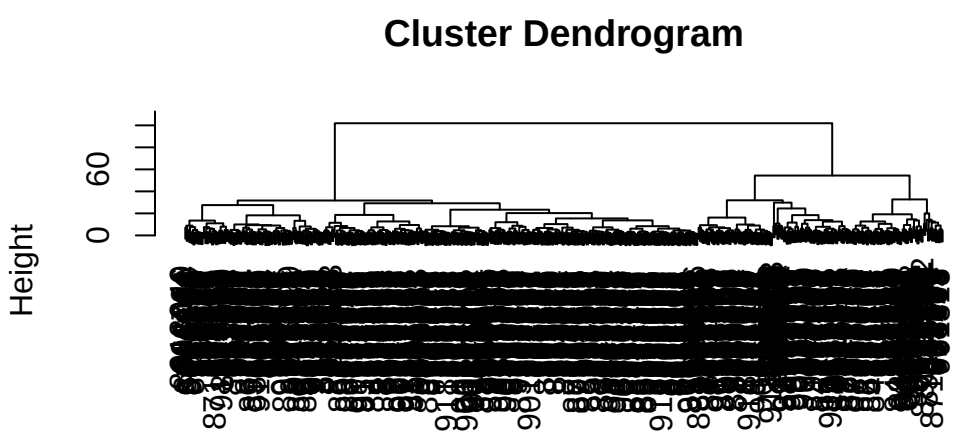
```
wisc.hclusttt <- hclust(data.dist, method="average")
```

```
plot(wisc.hclusttt)
```




```
wisc.hclustttt <- hclust(data.dist, method="ward.D2")
```

```
plot(wisc.hclustttt)
```



Q13. Which method gives your favorite results for the same data.dist dataset? Explain your reasoning. From all the results that are plotted above as dendograms, the one that gives me my favorite results is the ward D.2 methods, which involves calculation of distance based upon the centroid of each clusters as the clusters continually get bigger using the bottom-up hierarchy method. This is because after looking at all the plots above, the ward. d2 graphs gives the most clear separation, between two clusters, with a crossbar with a very high height connecting them, indicating 2 very nested clusters that have a very large separation distance between them. This separation gives me the most hope that we will be able to extract out 2 distinct clusters, with one being the malignant and the other being the benign group.

K means clustering

```
wisc.km <- kmeans(data.scaled, centers=2, nstart=20)
```

```
table(wisc.km$cluster, diagnosis)
```

```
   diagnosis
      B   M
  1  14 175
```

```
  2 343  37
```

Q14. How well does k-means separate the two diagnoses? How does it compare to your hclust results? For the separation into 2 clusters, the k means method did better than the bottom up hierarchy method. Looking at the separation in the 2 clusters, for the first row it appears that the majority of the samples are benign, with 356 versus 82, and although this separation could be better the separation is ok. Looking at the hierarchy method when the dendogram was divided into 2 clusters on the complete method, two clusters appeared one with 357 benign and the other with 210 malignant, which is a much worse separation and difficult to isolate this one group as malignant or benign. Looking at the second row for the k means method, it appears that 130 were assigned into the malignant which is a massive majority over the 1 benign indicating gerat separation again for the k means method.

Combining Methods

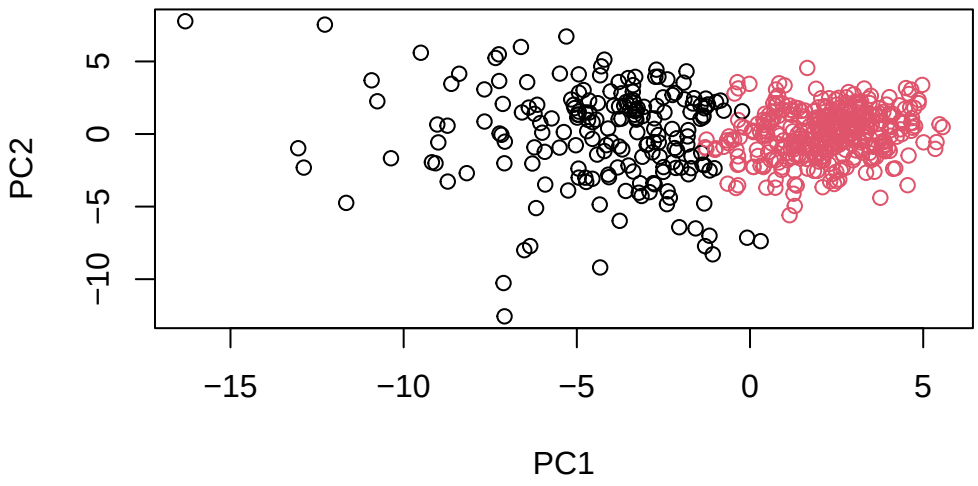
```
grps <- cutree(wisc.pr.hclust, k=2)
table(grps)
```

```
grps
  1   2
195 374
```

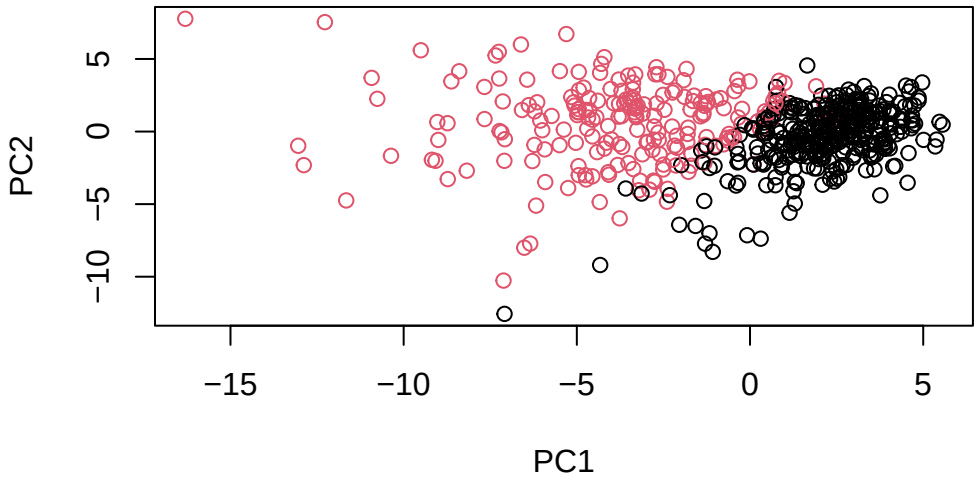
```
table(grps, diagnosis)
```

```
    diagnosis
grps   B   M
   1  18 177
   2 339  35
```

```
plot(wisc.pr$x[,1:2], col=grps)
```




```
plot(wisc.pr$x[,1:2], col=diagnosis)
```



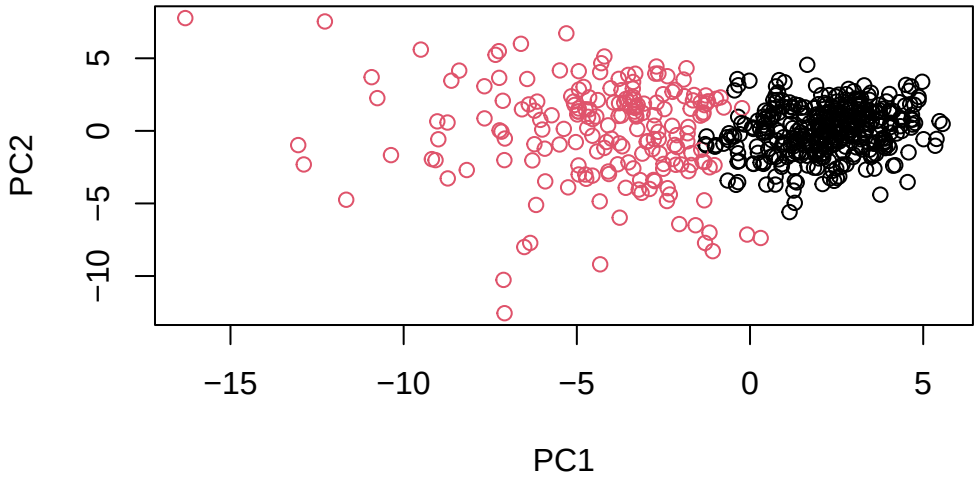
```
g <- as.factor(grps)
levels(g)
```

```
[1] "1" "2"
```

```
g <- relevel(g,2)
levels(g)
```

```
[1] "2" "1"
```

```
plot(wisc.pr$x[,1:2], col=g)
```




```
data.dist <- dist(wisc.pr$x[, 1:7])
wisc.pr.hclust <- hclust(data.dist, method = "ward.D2")
```

```
wisc.pr.hclust.clusters <- cutree(wisc.pr.hclust, k=2)
```

```
table(wisc.pr.hclust.clusters, diagnosis)
```

```
                        diagnosis
wisc.pr.hclust.clusters   B   M
                      1  28 188
                      2 329  24
```

```
wwisc.pr.hclust.clusters <- cutree(wisc.pr.hclust, k=4)
```

```
table(wwisc.pr.hclust.clusters, diagnosis)
```

```
                        diagnosis
wwisc.pr.hclust.clusters   B   M
                       1   0  45
                       2   2  77
                       3  26  66
                       4 329  24
```

Q15: How well does the newly created model with four clusters separate out the two diagnosis? Looking at the above model, where the data was divided into 4 clusters, it does a decent job of separating out the diagnosis, with row 3 being the worst of the separation. Row 1 does a perfect job of isolating all the malignant cases, while row 2 also does a great job of separting out the malignant cases. Row 3 does the worst job of separation, where there are only 30 more malignant compraed to benign. Row 4 also does a decent job of separation with the majority of the diagnosis being benign compared to only 24 malignant. This clustering method for 2 clusters as seen in the code just above the previous one also does a decent job at isolating the diagnosis with 188 being of the malignant with only 28 benign in the first row, and for the second row grabbing the opposite with 329 benign and 24 malignant.

```
table(wisc.km$cluster, diagnosis)
```

```
   diagnosis
      B   M
  1  14 175
  2 343  37
```

```
table(wisc.hclust.clusters, diagnosis)
```

```
                    diagnosis
wisc.hclust.clusters   B   M
```

```
  1  12 165
  2   2   5
  3 343  40
  4   0   2
```

```
wwwisc.hclust.clusters <- cutree(wisc.hclust, k=2)
```

```
table(wwwisc.hclust.clusters, diagnosis)
```

```
                     diagnosis
wwwisc.hclust.clusters   B   M
                     1 357 210
                     2   0   2
```

Q16: How well do the k-means and hierarchical clustering models you created in previous sections (i.e. before PCA) do in terms of separating the diagnoses? Again, use the table() function to compare the output of each model (wisc.km$cluster and wisc.hclust.clusters) with the vector containing the actual diagnoses. Looking at the two methods, which we were instructed to do the k-clustering into 2 clusters and the hierarchy method to cut the dendogram into 4 major clusters, the separation is ok but not nearly perfect to where we can definitively have two groups with malignant and benign. Looking at the k-clustering method for two clusters, the first row has 356 for benign and 82 for malignant, which still shows a pretty good shot of finding a malignant sample in this group, and is thus not a great separation. It did decenetly separate the malignant group though, with only 1 benign present. For 4 clusters, the hierarchal method did not do a perfect job either with 165 in the malignant and 12 in the benign and for row 3 with 40 in malignant and 343 with benign. This did an ok separation, but there is still some overlap that could lead to false negative malignant samples if a physician were to use these samples and thus would not to be to standard for medical practice. Comparing to the 2 cluster separation in the hierarchal method, it did a horrible job of separation. Looking at the first row, there is only slightly more benign than malignant with the second row having almost nothing. These results, when directly compared to the kclustering method when there are 2 clusters, did a much worse job and is not useful data in any sense.

Q17. Which of your analysis procedures resulted in a clustering model with the best specificity? How about sensitivity? Looking at the k means method where 2 clusters were used, the maximum number of malignant in a cluster was 130 with therefore 82 false negatives, yielding a sensitivy percentage of approximately 61. Looking at the specificity percentage, there 356 cases as the maximum number of benign in one cluster with 1 false negative in the second cluster yielding a specificity

percentage of 99.72%. Looking at the hierarchal method where 4 clustesr were used, the senstivity percentage was calculated looking ath the maximum number of malignant cases in one cluster which was 165, leaving 47 false negativves. This yielded a percentage of 77.83%. FOr the specificity percentage, the maximum number of benign in a column was 343 with 14 false negatives leading to a specificity percentage of 96.07%. This indicates that the the heirarchal method yielding a better sensitivity, and the k means method had a better specificity. They did really badly. We do much better after PCA - the new PCA variables (what we call a basis set) give us much better separation of M and B.

7. Prediction

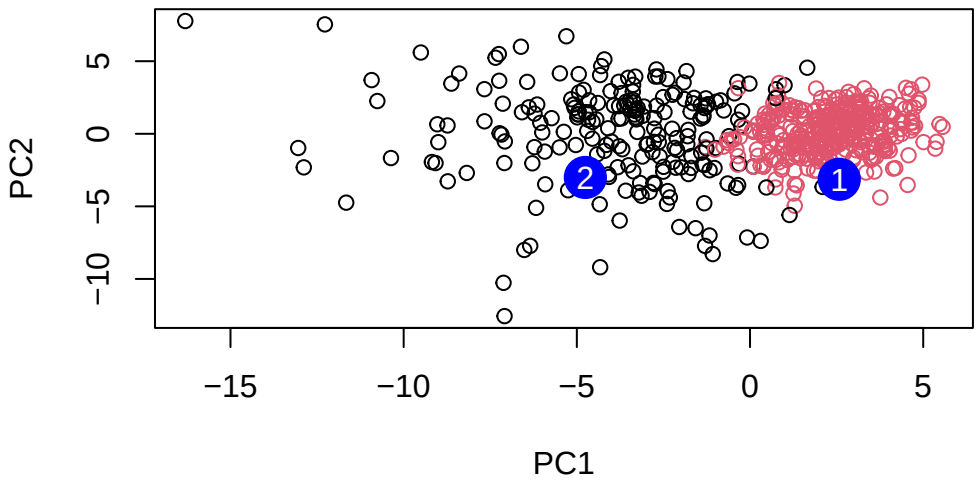
We can use our PCA model for the analysis of new "unseen"' data. In this case from U. Mich.

```
h <- cutree(wisc.pr.hclust, k = 2)
```

```
#url <- "new_samples.csv"
url <- "https://tinyurl.com/new-samples-CSV"
new <- read.csv(url)
npc <- predict(wisc.pr, newdata=new)
npc
```

```
          PC1       PC2        PC3        PC4       PC5        PC6        PC7
[1,]  2.576616 -3.135913  1.3990492 -0.7631950  2.781648 -0.8150185 -0.3959098
[2,] -4.754928 -3.009033 -0.1660946 -0.6052952 -1.140698 -1.2189945  0.8193031
           PC8       PC9       PC10       PC11      PC12      PC13     PC14
[1,] -0.2307350 0.1029569 -0.9272861 0.3411457  0.375921 0.1610764 1.187882
[2,] -0.3307423 0.5281896 -0.4855301 0.7173233 -1.185917 0.5893856 0.303029
          PC15       PC16        PC17        PC18        PC19       PC20
[1,] 0.3216974 -0.1743616 -0.07875393 -0.11207028 -0.08802955 -0.2495216
[2,] 0.1299153  0.1448061 -0.40509706  0.06565549  0.25591230 -0.4289500
          PC21       PC22       PC23       PC24        PC25         PC26
[1,]  0.1228233 0.09358453 0.08347651  0.1223396  0.02124121  0.078884581
[2,] -0.1224776 0.01732146 0.06316631 -0.2338618 -0.20755948 -0.009833238
             PC27        PC28         PC29         PC30
[1,]  0.220199544 -0.02946023 -0.015620933  0.005269029
[2,] -0.001134152  0.09638361  0.002795349 -0.019015820
```

```
plot(wisc.pr$x[,1:2], col=h)
points(npc[,1], npc[,2], col="blue", pch=16, cex=3)
text(npc[,1], npc[,2], c(1,2), col="white")
```



Q18: Which of these new patients should we prioritize for follow-up based on the results? We should prioritize patient 2, which in this case is seen in black. This is because after running the Prinicipal Component analysis and drawing a line of best fit for the datap points, constituting PC1, and then looking at the second most variation, being PC2, and aftter creating new axes based on these principal components, we see two distinct clusters emerge, where the samples of patient 2 being malignant, clearly differentiate from the first cluster and should be prioritized.