Kelompok 8 - K01

Anggota:

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4. Test hipotesis 1 sampel

In [1]:
```
import csv
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
table = df.style.set_properties(**{'border': '1px solid black'})
display(table)
```

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
0	5.900000	0.445100	0.181300	2.049401	0.070574	16.593818	42.270000	0.998200	3.270000	0.710000	8.640000	7
1	8.400000	0.576800	0.209900	3.109590	0.101681	22.555519	16.010000	0.996000	3.350000	0.570000	10.030000	8
2	7.540000	0.591800	0.324800	3.673744	0.072416	9.316866	35.520000	0.999000	3.310000	0.640000	9.230000	8
3	5.390000	0.420100	0.313100	3.371815	0.072755	18.212300	41.970000	0.994500	3.340000	0.550000	14.070000	9
4	6.510000	0.567500	0.194000	4.404723	0.066379	9.360591	46.270000	0.992500	3.270000	0.450000	11.490000	8
5	9.180000	0.333200	0.247600	2.633491	0.082304	12.232170	51.050000	0.996500	3.400000	0.630000	10.820000	8
6	4.290000	0.499700	0.293200	3.781844	0.079649	10.152389	44.260000	0.996900	3.470000	0.440000	9.760000	7
7	6.690000	0.406600	0.289600	1.340813	0.083253	11.330200	29.390000	0.999900	3.140000	0.680000	8.880000	7
8	8.720000	0.439200	0.188600	3.370502	0.082057	18.145810	38.490000	0.994700	3.270000	0.590000	10.510000	8
9	6.160000	0.392400	0.283000	2.290365	0.048850	15.517359	58.290000	0.996900	3.370000	0.510000	9.960000	7
10	6.390000	0.575400	0.239600	2.353329	0.092977	8.063703	54.670000	0.998100	3.430000	0.570000	10.520000	8
11	7.090000	0.575400	0.329900	3.880591	0.052154	8.513014	36.790000	0.996500	3.230000	0.460000	11.890000	9
12	8.990000	0.450900	0.260000	3.468639	0.073987	21.789580	39.000000	0.996400	3.320000	0.490000	10.230000	9
13	6.430000	0.557600	0.288000	2.331871	0.105028	7.027136	47.010000	0.993300	3.070000	0.590000	7.910000	6
14	6.670000	0.546100	0.264500	5.052230	0.091908	22.400427	30.570000	0.997900	3.250000	0.820000	10.100000	8
15	6.680000	0.507200	0.303300	3.758830	0.110642	11.053747	41.010000	0.996000	3.500000	0.540000	11.570000	9
16	9.850000	0.735800	0.231600	2.058231	0.070405	15.251925	50.260000	1.000600	3.300000	0.690000	7.890000	7
17	9.820000	0.435900	0.303400	0.077156	0.068899	16.108885	29.920000	0.998500	3.100000	0.430000	7.650000	7
18	8.400000	0.521400	0.330400	2.777812	0.103512	12.593024	53.640000	0.995000	3.390000	0.640000	12.430000	9
19	7.660000	0.481800	0.361800	2.108945	0.083009	17.827693	39.330000	0.994800	3.290000	0.500000	10.790000	8
20	8.080000	0.482800	0.349200	1.873461	0.121540	13.788166	34.630000	0.993400	3.350000	0.720000	12.160000	9
21	8.990000	0.535900	0.243200	2.004388	0.061590	10.617592	23.410000	0.996000	3.340000	0.450000	9.520000	8
22	6.080000	0.490600	0.298900	2.653131	0.094666	11.027299	43.730000	0.998100	3.320000	0.740000	8.380000	6
23	8.610000	0.434000	0.310400	3.814913	0.092722	13.368899	43.330000	0.997000	3.220000	0.660000	10.230000	9
24	5.700000	0.532400	0.299500	1.519682	0.103826	22.957007	27.320000	0.998500	3.140000	0.350000	12.600000	8
25	6.430000	0.638200	0.307700	2.429620	0.092479	15.087429	16.690000	0.994800	3.310000	0.520000	8.480000	7
26	8.290000	0.614300	0.291200	2.298249	0.094214	11.938134	35.770000	0.998300	3.390000	0.550000	10.100000	8
27	5.490000	0.540300	0.242700	1.676226	0.083519	8.861216	25.050000	0.995900	3.220000	0.480000	13.390000	9
28	7.030000	0.446500	0.280400	2.781296	0.099744	14.792867	20.520000	0.998500	3.220000	0.670000	10.010000	8
29	6.170000	0.538600	0.312300	4.272111	0.070737	12.294579	39.740000	0.993000	3.350000	0.780000	9.610000	8
30	6.890000	0.628500	0.293100	3.116179	0.098682	3.980429	36.780000	0.994600	3.490000	0.750000	10.790000	8
31	3.840000	0.639100	0.215200	2.571114	0.117740	17.580437	31.180000	0.994600	3.470000	0.860000	11.250000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
32	5.070000	0.556000	0.226100	2.061218	0.066204	18.881568	29.590000	0.997600	3.190000	0.400000	13.960000	9
33	6.360000	0.483600	0.249500	2.546787	0.094338	17.665703	43.060000	0.992800	3.360000	0.440000	11.520000	8
34	8.310000	0.499700	0.259800	0.782457	0.088850	24.162211	41.540000	0.995800	3.320000	0.580000	11.240000	8
35	6.990000	0.597200	0.277900	2.439822	0.061370	17.059093	52.010000	0.998300	3.340000	0.710000	10.070000	8
36	7.200000	0.588600	0.221100	2.306700	0.082253	13.481065	38.270000	0.997500	3.290000	0.680000	10.020000	8
37	8.030000	0.344200	0.309700	2.977353	0.098141	17.786613	20.060000	0.996100	3.250000	0.600000	10.240000	8
38	6.140000	0.585900	0.177100	3.448505	0.095455	19.173339	32.940000	0.999000	3.420000	0.630000	12.260000	9
39	7.540000	0.591100	0.296400	3.245329	0.062791	14.576075	30.160000	0.996900	3.210000	0.630000	11.350000	9
40	6.230000	0.431300	0.295300	2.368063	0.085652	16.368723	38.240000	0.996600	3.330000	0.870000	9.000000	7
41	5.130000	0.443500	0.302200	1.982591	0.089598	14.465371	26.320000	0.995500	3.470000	0.750000	12.450000	8
42	6.730000	0.444300	0.116700	1.872607	0.098495	21.920750	26.110000	0.999600	3.300000	0.610000	13.530000	9
43	7.890000	0.452000	0.202500	1.718294	0.081148	21.428939	27.330000	0.999200	3.360000	0.510000	12.720000	9
44	7.610000	0.378300	0.252400	1.884935	0.068868	13.898686	36.730000	0.996700	3.420000	0.390000	11.400000	8
45	7.190000	0.551300	0.278400	2.376873	0.102447	11.126586	46.290000	0.996800	3.220000	0.670000	9.700000	8
46	10.070000	0.441400	0.265900	1.279748	0.058569	14.562957	35.510000	0.996400	3.200000	0.590000	12.830000	10
47	7.700000	0.513000	0.229300	2.943229	0.067315	6.765771	36.120000	0.996100	3.210000	0.730000	8.630000	7
48	8.370000	0.470200	0.334200	2.391493	0.095443	18.908430	53.880000	0.995700	3.500000	0.690000	11.380000	9
49	9.890000	0.545500	0.286200	1.665114	0.086660	19.489086	52.960000	0.997100	3.260000	0.560000	9.940000	8
50	5.650000	0.418900	0.250300	1.859870	0.083037	9.912278	38.580000	0.994500	3.310000	0.740000	7.750000	6
51	5.950000	0.544500	0.220600	3.338910	0.063999	19.290341	31.490000	0.994400	3.240000	0.870000	10.990000	8
52	9.290000	0.559000	0.273400	3.404153	0.098335	13.935516	46.790000	0.994300	3.220000	0.470000	12.660000	10
53	6.240000	0.602800	0.332900	4.888721	0.091569	24.472462	40.030000	0.997800	3.260000	0.610000	10.570000	8
54	7.240000	0.716800	0.271800	3.067123	0.119092	26.822626	53.400000	0.992100	3.420000	0.610000	11.240000	9
55	8.480000	0.310800	0.268400	1.824395	0.094007	13.930505	43.030000	0.999500	3.330000	0.680000	8.850000	7
56	8.270000	0.552000	0.273300	1.778854	0.052325	7.440182	33.220000	0.994800	3.350000	0.790000	10.110000	8
57	9.310000	0.449100	0.276000	2.889152	0.082105	21.433624	33.410000	0.993600	3.260000	0.540000	8.030000	7
58	8.990000	0.327500	0.258300	3.305637	0.078227	23.913162	48.660000	0.995900	3.370000	0.650000	10.760000	9
59	8.480000	0.604200	0.221400	3.907747	0.076863	18.945438	35.820000	0.993900	3.340000	0.350000	11.050000	9
60	6.270000	0.653200	0.346500	1.625774	0.076022	15.206213	31.580000	0.994700	3.170000	0.650000	8.820000	7
61	8.150000	0.480800	0.301900	2.600980	0.083295	20.654814	58.010000	0.995100	3.350000	0.630000	10.020000	8
62	7.580000	0.541100	0.375900	1.338407	0.065218	9.348827	28.670000	0.995800	3.200000	0.660000	11.900000	8
63	5.610000	0.513600	0.294900	2.879875	0.048207	20.524960	26.980000	0.991800	3.390000	0.550000	12.770000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
64	8.900000	0.563400	0.258400	1.486602	0.088167	11.475592	44.380000	0.996800	3.300000	0.750000	8.720000	7
65	8.170000	0.608100	0.222700	3.955274	0.101895	14.059880	35.200000	0.994800	3.210000	0.620000	12.910000	10
66	7.250000	0.554500	0.253500	1.721984	0.089206	21.507712	43.330000	0.992100	3.350000	0.460000	11.190000	8
67	6.920000	0.554600	0.212400	3.109134	0.085904	21.346088	36.720000	0.996200	3.210000	0.540000	12.610000	9
68	5.760000	0.646000	0.374900	2.651129	0.064630	14.269624	41.430000	0.999700	3.340000	0.670000	9.290000	7
69	7.440000	0.503500	0.269100	2.549085	0.097249	11.808933	39.450000	0.992500	3.150000	0.680000	8.510000	7
70	7.760000	0.612300	0.309300	0.695727	0.040637	15.701274	34.170000	0.995600	3.330000	0.550000	11.550000	8
71	6.200000	0.437800	0.318100	2.408897	0.120717	10.567496	47.540000	0.996200	3.350000	0.590000	10.680000	7
72	8.590000	0.680700	0.324000	1.520449	0.068922	21.063636	37.060000	0.998700	3.200000	0.550000	8.860000	7
73	5.880000	0.593800	0.397400	1.915000	0.094270	11.651429	41.050000	0.993900	3.200000	0.410000	11.840000	8
74	4.650000	0.479600	0.265200	2.988721	0.070848	9.951948	44.720000	0.998000	3.210000	0.600000	10.790000	8
75	8.450000	0.308500	0.260900	5.217429	0.082157	19.383603	33.230000	0.994500	3.180000	0.500000	10.150000	9
76	6.720000	0.520000	0.278200	4.398206	0.073152	16.790287	39.580000	0.997600	3.310000	0.510000	7.880000	7
77	7.050000	0.401800	0.307400	3.016636	0.039947	11.980564	50.140000	0.998200	3.250000	0.560000	11.300000	8
78	6.190000	0.550000	0.278900	2.885393	0.092566	12.308536	39.190000	0.995200	3.210000	0.510000	11.340000	8
79	5.270000	0.665100	0.256600	2.149166	0.058617	13.919799	44.660000	0.993500	3.320000	0.490000	10.050000	7
80	8.710000	0.536000	0.234200	1.498965	0.057006	10.482226	38.190000	0.996600	3.160000	0.680000	9.160000	8
81	6.370000	0.502200	0.231300	2.942975	0.070280	15.880176	44.360000	0.996300	3.330000	0.450000	10.640000	8
82	9.190000	0.554200	0.283500	2.055552	0.074287	13.993145	34.670000	0.993600	3.430000	0.520000	13.780000	10
83	8.170000	0.548600	0.220100	4.256206	0.087034	6.798918	40.250000	0.996700	3.530000	0.520000	12.390000	10
84	6.820000	0.283700	0.179300	4.646385	0.069780	12.918894	49.170000	0.995900	3.210000	0.680000	9.610000	8
85	5.900000	0.544100	0.275800	4.640421	0.133656	22.138504	53.390000	0.995900	3.210000	0.680000	11.100000	8
86	6.320000	0.582000	0.328100	1.864503	0.049203	10.354139	38.300000	0.996200	3.170000	0.790000	10.020000	7
87	5.740000	0.494100	0.303100	1.992733	0.073479	12.042560	39.320000	0.996000	3.470000	0.560000	11.320000	8
88	9.700000	0.617900	0.269100	1.289081	0.089711	12.994629	39.150000	0.994900	3.480000	0.590000	11.830000	9
89	7.400000	0.507200	0.290200	3.148398	0.101764	14.461410	47.620000	0.997200	3.470000	0.520000	13.420000	10
90	8.580000	0.596700	0.187600	1.645164	0.092579	8.094486	21.020000	0.993900	3.240000	0.530000	10.870000	8
91	5.680000	0.747300	0.235500	1.896227	0.096933	11.075262	52.520000	0.999900	3.470000	0.780000	7.480000	6
92	7.420000	0.510400	0.353900	1.612430	0.066136	14.040140	27.730000	0.990500	3.280000	0.500000	10.470000	8
93	8.610000	0.325800	0.329200	1.943167	0.091905	18.100487	35.370000	0.997600	3.120000	0.620000	8.870000	8
94	6.800000	0.486300	0.234400	4.153726	0.106056	17.521526	49.600000	0.997700	3.120000	0.620000	10.400000	8
95	8.440000	0.347400	0.357700	0.033333	0.089850	16.221238	39.880000	0.995400	3.350000	0.610000	11.090000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
96	5.900000	0.581100	0.234100	3.025893	0.127894	16.246370	40.440000	0.993600	3.150000	0.550000	12.130000	9
97	5.560000	0.650900	0.228800	1.693601	0.078812	10.145213	41.700000	0.996100	3.390000	0.750000	12.890000	8
98	7.660000	0.589600	0.346800	4.844213	0.073391	5.407590	42.860000	0.994100	3.400000	0.700000	12.420000	10
99	6.740000	0.552000	0.335400	3.327986	0.045584	7.931085	37.590000	0.995400	3.480000	0.560000	9.710000	7
100	7.970000	0.455500	0.240600	1.481249	0.071196	16.770908	38.570000	0.994200	3.250000	0.800000	9.270000	7
101	4.830000	0.677600	0.267500	1.889251	0.090266	17.370372	51.580000	0.998000	3.210000	0.690000	10.650000	7
102	8.050000	0.595300	0.252900	1.930069	0.097931	10.105265	50.950000	0.995900	3.220000	0.620000	11.370000	8
103	10.320000	0.548400	0.295200	3.650658	0.107943	23.364176	62.900000	0.998300	3.290000	0.450000	12.380000	10
104	7.170000	0.540500	0.348400	4.194467	0.084406	23.194447	54.960000	0.995900	3.230000	0.650000	9.860000	8
105	7.240000	0.531200	0.296600	2.653618	0.068620	10.679980	46.830000	0.992500	3.280000	0.670000	10.350000	8
106	7.420000	0.565200	0.264300	2.356779	0.053630	15.460999	48.500000	0.996300	3.410000	0.620000	9.910000	8
107	4.970000	0.458700	0.202700	3.543745	0.076356	20.379117	45.810000	0.998800	3.280000	0.590000	9.020000	7
108	7.710000	0.672500	0.308900	2.527361	0.059465	22.456350	41.760000	0.995700	3.210000	0.600000	11.520000	8
109	5.270000	0.535200	0.208900	2.967956	0.076001	16.134894	27.600000	0.993500	3.300000	0.630000	10.970000	7
110	6.690000	0.580000	0.260600	2.721304	0.052242	12.582566	43.260000	0.995300	3.180000	0.630000	11.670000	8
111	8.690000	0.476600	0.317900	1.711741	0.072913	17.921474	33.300000	0.993700	3.300000	0.670000	10.780000	8
112	6.320000	0.557500	0.310600	3.863263	0.067362	17.553053	44.800000	0.997900	3.430000	0.480000	10.760000	8
113	7.800000	0.291800	0.311900	1.908141	0.100386	23.617158	49.340000	0.993700	3.230000	0.610000	12.010000	9
114	8.420000	0.408200	0.304900	4.437799	0.056608	18.848047	24.590000	0.994000	3.210000	0.560000	7.700000	7
115	7.530000	0.516900	0.277300	3.680184	0.046285	17.496622	48.750000	0.995900	3.280000	0.650000	9.220000	8
116	5.550000	0.387800	0.285100	2.693701	0.095687	14.818686	38.010000	0.998500	3.510000	0.420000	11.210000	8
117	6.800000	0.763900	0.274600	1.256214	0.110118	17.688429	49.200000	0.994100	3.300000	0.630000	11.110000	8
118	9.550000	0.353200	0.294100	4.175827	0.095465	4.208686	48.290000	0.995600	3.180000	0.620000	9.880000	9
119	4.770000	0.554600	0.296800	2.815378	0.077157	16.328779	30.730000	0.995100	3.360000	0.660000	9.120000	6
120	6.870000	0.685600	0.276700	3.393569	0.062827	18.229211	35.830000	0.995300	3.360000	0.820000	12.620000	9
121	6.540000	0.568100	0.295700	3.976935	0.075809	6.989276	44.530000	0.991600	3.450000	0.420000	9.110000	7
122	7.340000	0.489000	0.235800	1.379997	0.072102	9.740510	25.720000	0.993200	3.330000	0.630000	11.450000	8
123	8.100000	0.464800	0.254700	2.863630	0.055982	5.587775	38.440000	0.994400	3.180000	0.520000	7.890000	7
124	9.130000	0.587300	0.281500	2.123074	0.080264	17.674946	54.150000	0.996600	3.170000	0.750000	9.840000	8
125	6.880000	0.440000	0.366200	2.819489	0.105759	19.101710	49.360000	0.994900	3.260000	0.610000	11.390000	8
126	8.170000	0.508100	0.296400	2.957127	0.097090	7.894802	55.810000	0.992900	3.430000	0.640000	7.950000	7
127	7.800000	0.589100	0.263300	0.836426	0.087063	13.480139	34.480000	0.995300	3.210000	0.550000	11.010000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
128	7.770000	0.489200	0.259000	2.271921	0.078858	9.996584	32.790000	0.996600	3.340000	0.500000	12.090000	9
129	6.520000	0.528800	0.307200	2.589649	0.060414	17.756233	44.820000	0.999100	3.240000	0.640000	11.530000	8
130	6.000000	0.489600	0.265100	1.247675	0.101805	10.159513	34.310000	0.996700	3.340000	0.660000	9.130000	7
131	5.880000	0.423000	0.301900	1.764652	0.051259	10.541887	28.090000	0.994000	3.450000	0.470000	9.460000	7
132	6.290000	0.638900	0.295600	2.624635	0.037137	17.082175	53.170000	0.996000	3.320000	0.620000	11.600000	8
133	7.590000	0.659300	0.207700	3.186243	0.078750	26.630490	49.910000	0.995400	3.240000	0.600000	11.000000	8
134	8.110000	0.488300	0.293600	2.353296	0.071536	10.925754	38.110000	0.993100	3.340000	0.620000	12.370000	9
135	7.590000	0.493400	0.293300	1.801214	0.072910	11.611903	45.080000	0.996100	3.520000	0.580000	8.440000	7
136	6.540000	0.502200	0.309800	1.495829	0.094503	13.494288	56.270000	0.998800	3.260000	0.560000	8.450000	6
137	9.370000	0.573900	0.228100	2.142729	0.090785	17.928518	32.410000	0.998600	3.340000	0.480000	9.520000	8
138	9.020000	0.429500	0.324700	1.700977	0.093284	15.937062	54.220000	0.990600	3.400000	0.550000	9.010000	7
139	6.780000	0.511100	0.261700	3.095316	0.101813	11.775423	29.320000	0.995700	3.400000	0.650000	9.940000	8
140	6.210000	0.546300	0.369400	2.752999	0.054634	12.710952	28.680000	0.995100	3.380000	0.790000	10.490000	8
141	7.360000	0.584200	0.357600	1.849744	0.114981	12.236629	41.830000	0.995500	3.340000	0.650000	8.260000	7
142	8.720000	0.241900	0.239600	2.728025	0.062930	9.502258	35.220000	0.996200	3.450000	0.420000	9.970000	8
143	7.600000	0.560300	0.201500	4.830464	0.086192	19.992379	39.100000	0.993300	3.420000	0.710000	10.800000	9
144	7.870000	0.554600	0.304900	3.252367	0.117478	13.148169	37.580000	0.995400	3.250000	0.640000	9.410000	8
145	6.950000	0.620800	0.229000	2.754654	0.112577	17.574028	49.560000	0.995500	3.350000	0.730000	10.180000	8
146	7.750000	0.467400	0.327400	3.217126	0.108268	11.898973	35.760000	0.999600	3.340000	0.790000	11.110000	8
147	9.050000	0.468200	0.296500	3.764248	0.079567	15.533967	27.500000	0.993400	3.260000	0.730000	10.950000	9
148	6.910000	0.640300	0.197300	0.978649	0.050830	20.351469	38.920000	0.996200	3.100000	0.630000	11.670000	8
149	7.370000	0.363700	0.309100	2.073881	0.058615	22.407884	64.030000	0.992400	3.390000	0.600000	12.040000	9
150	7.500000	0.682900	0.276900	1.882905	0.073666	19.832226	28.570000	0.998700	3.250000	0.700000	11.000000	8
151	7.540000	0.775600	0.290600	1.854316	0.066317	10.476673	41.590000	0.995200	3.270000	0.560000	9.950000	8
152	5.510000	0.567700	0.346200	4.614278	0.065647	7.681923	27.280000	0.996400	3.330000	0.590000	10.720000	8
153	4.950000	0.601400	0.263500	3.010283	0.075283	14.864701	24.510000	0.995300	3.210000	0.700000	11.320000	8
154	5.980000	0.371000	0.307900	3.615800	0.067210	17.498584	33.810000	0.993200	3.350000	0.700000	12.110000	9
155	7.400000	0.450500	0.240100	2.798932	0.069678	23.568005	48.410000	0.996500	3.440000	0.550000	13.580000	10
156	7.860000	0.625800	0.241300	5.252864	0.081850	14.583898	53.740000	0.996600	3.320000	0.680000	10.910000	9
157	6.560000	0.556200	0.259100	0.489961	0.060184	18.995832	41.000000	0.994100	3.420000	0.510000	10.550000	7
158	8.850000	0.501900	0.239000	2.015615	0.094363	16.423317	38.460000	0.996200	3.230000	0.550000	8.970000	8
159	7.030000	0.543300	0.298400	2.059379	0.098929	8.916836	45.160000	0.995700	3.350000	0.660000	7.580000	6

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
160	7.220000	0.570700	0.203800	2.151206	0.070843	18.237188	34.020000	0.999200	3.290000	0.820000	13.380000	9
161	6.970000	0.490700	0.311500	3.414502	0.080197	14.357203	38.830000	0.997800	3.090000	0.710000	13.260000	9
162	7.360000	0.517100	0.231900	2.590204	0.110367	19.342211	47.160000	0.997600	3.410000	0.620000	12.720000	9
163	8.050000	0.516400	0.288900	3.150534	0.096020	8.156088	24.100000	0.996500	3.300000	0.430000	11.090000	9
164	8.000000	0.414800	0.210600	3.542308	0.112336	19.103184	34.180000	0.996200	3.340000	0.550000	12.140000	9
165	6.120000	0.552400	0.293900	2.725408	0.095419	14.398007	38.190000	0.994900	3.280000	0.620000	11.710000	8
166	9.030000	0.700400	0.324200	3.228528	0.100628	12.455864	44.560000	0.994100	3.270000	0.640000	10.340000	9
167	5.890000	0.693200	0.270500	2.059756	0.068684	22.876754	23.820000	0.998000	3.270000	0.570000	9.350000	7
168	7.300000	0.372400	0.347400	1.855122	0.079407	19.122659	21.840000	0.993700	3.260000	0.430000	10.150000	8
169	6.870000	0.577100	0.263000	1.613799	0.064734	19.023511	19.330000	0.995800	3.270000	0.540000	10.710000	8
170	5.940000	0.587600	0.290600	2.584408	0.081678	14.324538	31.920000	0.993500	3.240000	0.590000	7.820000	6
171	7.110000	0.478900	0.223700	1.545859	0.090872	9.197212	47.260000	0.995400	3.240000	0.520000	11.660000	8
172	6.310000	0.423600	0.291900	1.430049	0.084701	8.575916	44.510000	0.995000	3.180000	0.650000	10.610000	7
173	7.290000	0.387900	0.241600	3.151409	0.050053	13.365690	48.870000	0.997200	3.570000	0.500000	8.120000	7
174	7.680000	0.475500	0.234000	1.569588	0.064204	8.045865	38.310000	0.993600	3.230000	0.580000	11.130000	8
175	8.970000	0.555000	0.349000	3.067429	0.056440	12.635766	38.370000	0.990800	3.330000	0.560000	10.650000	9
176	7.570000	0.504200	0.206500	2.177844	0.086244	14.778826	38.630000	0.996700	3.180000	0.400000	12.950000	9
177	6.470000	0.458900	0.264300	1.921315	0.072149	13.250508	35.200000	0.998000	3.290000	0.560000	9.430000	7
178	6.730000	0.395100	0.305600	3.408626	0.085395	15.988551	65.350000	0.994800	3.210000	0.590000	6.380000	6
179	7.370000	0.555100	0.281700	3.492311	0.038560	3.535257	43.850000	0.996100	3.230000	0.700000	9.250000	8
180	7.310000	0.626700	0.177600	2.714198	0.081976	18.960606	31.400000	0.995500	3.230000	0.660000	11.100000	8
181	8.950000	0.427300	0.300200	3.910030	0.059586	14.403193	37.870000	0.995300	3.320000	0.610000	10.710000	9
182	8.870000	0.564800	0.201100	0.818446	0.094267	17.862542	49.080000	0.997200	3.230000	0.570000	9.490000	8
183	6.770000	0.332100	0.247800	3.580838	0.095431	13.153330	20.700000	0.997000	3.460000	0.640000	11.130000	8
184	6.540000	0.454300	0.257800	1.696147	0.091114	14.287246	37.350000	0.997400	3.310000	0.630000	9.980000	7
185	4.130000	0.593000	0.124000	2.269140	0.098840	9.442566	51.120000	0.996000	3.110000	0.410000	7.690000	5
186	6.540000	0.408200	0.264700	2.858551	0.096205	16.202684	46.050000	0.996300	3.340000	0.470000	9.810000	7
187	6.030000	0.459600	0.303300	1.806363	0.069654	11.429691	35.460000	0.996100	3.490000	0.380000	13.490000	9
188	6.770000	0.661800	0.261500	2.457358	0.051095	16.264223	48.660000	0.996700	3.330000	0.710000	11.310000	8
189	7.670000	0.446700	0.279200	2.073257	0.094290	19.305388	38.940000	0.995700	3.350000	0.330000	10.080000	8
190	7.410000	0.434600	0.383100	2.272311	0.086437	15.815632	30.200000	0.993300	3.270000	0.810000	9.270000	7
191	7.160000	0.577600	0.326300	4.604499	0.034462	24.810183	37.990000	0.996300	3.360000	0.670000	10.390000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
192	7.440000	0.715500	0.273000	0.643338	0.045711	17.105634	53.240000	0.996600	3.400000	0.590000	11.150000	8
193	7.050000	0.496000	0.399400	2.285287	0.054118	14.742894	44.510000	0.996400	3.320000	0.670000	11.350000	8
194	7.440000	0.596900	0.238200	2.892828	0.078422	16.009937	39.770000	0.998300	3.430000	0.500000	10.310000	8
195	3.320000	0.654600	0.296000	1.368346	0.052008	15.869891	24.870000	0.997300	3.430000	0.520000	12.110000	7
196	6.880000	0.552600	0.191200	2.331750	0.093102	18.190369	36.530000	0.997700	3.340000	0.640000	8.840000	7
197	7.070000	0.493000	0.289900	2.802877	0.069802	12.066375	47.860000	0.993700	3.220000	0.550000	9.250000	7
198	6.790000	0.432400	0.264400	2.859185	0.110925	16.742845	49.040000	0.997300	3.250000	0.590000	10.950000	8
199	6.940000	0.377500	0.273000	3.323009	0.088534	10.371476	23.350000	0.995700	3.330000	0.530000	8.140000	7
200	8.040000	0.631200	0.288500	3.596901	0.077391	15.725972	29.400000	0.994100	3.290000	0.550000	8.430000	7
201	6.480000	0.538100	0.284000	2.169430	0.088437	18.305296	37.440000	0.998100	3.220000	0.600000	11.820000	8
202	9.840000	0.653300	0.216400	2.587568	0.061335	19.402104	36.300000	0.993100	3.390000	0.740000	10.860000	9
203	8.030000	0.618900	0.250800	1.080679	0.108920	13.160393	46.300000	0.992800	3.250000	0.610000	9.860000	7
204	7.190000	0.458300	0.270300	2.447496	0.101009	21.038251	24.380000	0.995400	3.200000	0.540000	9.560000	8
205	6.950000	0.401300	0.198500	1.048927	0.084931	13.926947	32.900000	1.001400	3.350000	0.660000	9.060000	7
206	7.100000	0.561300	0.310100	2.510874	0.118665	9.018163	48.280000	0.996300	3.240000	0.520000	8.860000	7
207	6.100000	0.456700	0.364100	3.323422	0.050693	15.594329	49.190000	0.997900	3.200000	0.570000	8.040000	7
208	7.090000	0.557700	0.285200	2.913223	0.096190	18.665175	25.470000	0.996300	3.310000	0.830000	9.430000	7
209	7.530000	0.446900	0.243600	2.591216	0.104083	11.506950	46.080000	0.994300	3.580000	0.510000	12.380000	9
210	7.900000	0.433900	0.154900	3.307013	0.089933	8.180381	25.830000	0.997700	3.250000	0.640000	10.700000	8
211	7.900000	0.505900	0.194000	3.571200	0.076888	15.005841	46.060000	0.993700	3.300000	0.570000	9.300000	8
212	6.870000	0.613400	0.287000	1.671386	0.038802	14.483967	46.940000	0.997000	3.260000	0.540000	9.680000	7
213	5.500000	0.550700	0.333100	3.686114	0.101704	11.064815	41.700000	0.991700	3.300000	0.570000	10.900000	8
214	6.400000	0.637800	0.259000	1.743578	0.071467	21.668104	30.240000	0.993700	3.160000	0.400000	10.420000	8
215	9.130000	0.396600	0.195600	2.054474	0.078573	19.086854	20.140000	0.999300	3.270000	0.490000	10.580000	9
216	8.280000	0.414300	0.226400	3.225751	0.099728	20.034449	54.340000	0.999300	3.400000	0.670000	6.580000	6
217	7.640000	0.511100	0.241400	2.677594	0.099781	8.559121	25.310000	0.994100	3.170000	0.570000	12.230000	9
218	6.290000	0.736600	0.173400	2.476844	0.056886	13.583195	33.300000	0.997500	3.450000	0.470000	10.800000	8
219	7.200000	0.587400	0.254500	2.672731	0.060250	12.583980	37.310000	0.997900	3.130000	0.420000	10.620000	8
220	5.690000	0.413300	0.314600	3.813343	0.065845	13.122114	40.320000	0.997100	3.390000	0.550000	12.320000	9
221	6.540000	0.512400	0.185900	2.568017	0.093780	20.109885	45.320000	0.995900	3.400000	0.570000	8.670000	7
222	6.910000	0.542100	0.242000	3.245472	0.101590	12.162474	44.290000	0.992100	3.410000	0.590000	9.150000	7
223	6.770000	0.463100	0.168800	3.220071	0.090048	11.791541	42.120000	0.999300	3.310000	0.730000	12.570000	9

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
224	8.350000	0.581300	0.229000	4.587699	0.071188	20.160229	37.950000	0.994600	3.330000	0.530000	9.800000	8
225	5.500000	0.504400	0.262600	3.883316	0.077126	23.993125	30.910000	0.997900	3.370000	0.590000	9.520000	7
226	6.160000	0.490100	0.321100	3.204485	0.107725	21.518567	49.930000	0.998200	3.160000	0.610000	9.290000	7
227	5.550000	0.646000	0.292800	3.219541	0.057524	10.489217	43.840000	0.995300	3.360000	0.410000	9.070000	7
228	5.720000	0.349000	0.210800	2.668934	0.095596	4.814618	47.110000	0.996600	3.220000	0.680000	10.800000	8
229	7.350000	0.423800	0.274700	2.337756	0.077859	11.136404	37.810000	0.996300	3.300000	0.550000	12.320000	9
230	5.280000	0.438300	0.253300	2.487531	0.089793	14.352694	47.270000	0.994200	3.440000	0.630000	9.810000	7
231	8.100000	0.435200	0.269400	2.524400	0.080501	16.611594	15.560000	0.995900	3.360000	0.570000	11.000000	8
232	6.900000	0.447100	0.260000	2.050776	0.100630	12.473785	50.780000	0.996800	3.220000	0.700000	10.930000	8
233	7.280000	0.568800	0.285700	2.086367	0.090614	20.729729	38.000000	0.998900	3.460000	0.610000	10.580000	8
234	7.590000	0.629700	0.279100	2.436504	0.081409	17.881591	35.430000	0.999100	3.170000	0.670000	11.730000	9
235	6.680000	0.611600	0.313300	2.175740	0.125296	15.061148	34.660000	0.993700	3.220000	0.640000	11.970000	8
236	8.440000	0.418000	0.275800	2.306384	0.105017	7.932147	33.610000	0.998100	3.400000	0.560000	12.460000	9
237	6.970000	0.509300	0.354500	2.333273	0.085432	20.795427	40.170000	0.991900	3.230000	0.500000	11.790000	8
238	7.910000	0.565200	0.296000	3.405853	0.095510	14.779640	42.210000	0.995500	3.370000	0.460000	13.210000	10
239	6.960000	0.544000	0.343900	3.292343	0.082343	6.125071	56.070000	0.993600	3.370000	0.330000	8.340000	7
240	7.550000	0.650600	0.306000	3.524638	0.066175	21.137165	40.360000	0.997900	3.310000	0.640000	10.150000	8
241	7.540000	0.452500	0.236400	3.745065	0.045537	24.475633	28.370000	0.997000	3.370000	0.510000	9.490000	8
242	7.500000	0.535600	0.332100	1.779531	0.121293	13.879850	62.610000	0.992800	3.250000	0.730000	9.260000	7
243	6.030000	0.480700	0.329200	2.528871	0.071214	9.898939	39.580000	0.994400	3.230000	0.610000	11.120000	8
244	7.720000	0.545100	0.126400	2.801338	0.091782	20.567663	38.420000	0.996300	3.290000	0.720000	10.560000	8
245	6.820000	0.412100	0.242600	2.942236	0.105296	22.156132	34.640000	0.995800	3.300000	0.680000	14.450000	10
246	7.960000	0.427100	0.342100	3.012723	0.071219	18.543319	26.000000	0.995300	3.210000	0.610000	8.870000	7
247	4.620000	0.447000	0.322700	3.920225	0.074444	4.658317	52.230000	0.995400	3.110000	0.550000	7.410000	6
248	5.440000	0.463600	0.197000	1.951069	0.090383	11.793893	28.070000	0.992900	3.420000	0.650000	12.600000	8
249	7.640000	0.674800	0.312900	2.730783	0.090563	10.473531	50.080000	0.998900	3.390000	0.570000	11.760000	9
250	9.440000	0.637500	0.356400	1.283085	0.080664	17.826847	37.140000	0.998200	3.310000	0.460000	9.880000	8
251	8.200000	0.498700	0.300300	2.917018	0.058884	22.360629	45.810000	0.997600	3.220000	0.530000	9.700000	8
252	6.380000	0.537300	0.196200	0.907624	0.105782	15.056604	36.950000	0.996000	3.570000	0.590000	9.330000	7
253	5.170000	0.360600	0.230800	2.860498	0.095255	14.226055	43.230000	0.996700	3.410000	0.630000	11.670000	8
254	8.090000	0.502100	0.290000	3.740839	0.083638	7.604270	39.900000	0.998800	3.150000	0.480000	14.040000	10
255	7.100000	0.536000	0.259200	3.121866	0.096096	8.346521	40.340000	0.994900	3.360000	0.530000	10.450000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
256	7.910000	0.634600	0.333900	1.436201	0.015122	15.021793	52.530000	0.995700	3.270000	0.700000	8.410000	7
257	7.340000	0.552700	0.306600	1.725147	0.081269	22.162594	40.140000	0.992000	3.470000	0.510000	9.440000	7
258	7.240000	0.563300	0.368200	3.117026	0.071543	12.536931	29.070000	0.996300	3.360000	0.500000	8.570000	7
259	10.750000	0.549800	0.321000	2.387627	0.040796	12.094681	24.040000	0.996100	3.190000	0.740000	9.940000	9
260	7.190000	0.546900	0.297600	0.321690	0.090897	9.542316	34.310000	0.995000	3.180000	0.630000	8.640000	6
261	7.010000	0.380300	0.254300	3.916948	0.060320	8.634147	46.440000	0.997100	3.170000	0.490000	10.840000	8
262	7.050000	0.478300	0.340200	2.685618	0.108324	19.775430	46.040000	0.996700	3.320000	0.660000	12.280000	9
263	6.500000	0.663500	0.270300	1.070454	0.077165	13.734846	47.970000	0.998700	3.130000	0.570000	9.850000	7
264	8.390000	0.602400	0.218700	2.734405	0.093332	19.106053	44.120000	0.993900	3.030000	0.590000	9.420000	8
265	6.780000	0.569400	0.272400	4.714497	0.068427	5.794071	43.870000	0.994900	3.250000	0.540000	11.420000	9
266	7.960000	0.526700	0.265400	2.353452	0.096449	13.206486	32.500000	0.997600	3.180000	0.560000	9.120000	7
267	7.540000	0.585900	0.220300	2.338441	0.108344	22.520643	45.700000	0.995700	3.260000	0.710000	8.810000	7
268	8.660000	0.425500	0.311400	1.858303	0.048519	9.189975	54.980000	0.995900	3.080000	0.720000	9.850000	8
269	7.700000	0.362000	0.263000	3.147018	0.092361	9.875659	38.740000	1.000600	3.290000	0.860000	10.660000	8
270	5.740000	0.481800	0.289800	2.751357	0.047046	14.365937	46.590000	0.993500	3.300000	0.490000	11.140000	8
271	5.610000	0.573800	0.231000	3.311843	0.077708	14.956677	34.260000	0.995800	3.190000	0.710000	11.620000	8
272	8.890000	0.530800	0.261800	1.774248	0.085191	16.440992	50.500000	0.994500	3.110000	0.610000	11.450000	9
273	6.470000	0.621400	0.308700	3.228908	0.058157	14.405475	46.670000	0.998000	3.290000	0.640000	12.760000	9
274	5.620000	0.555100	0.257700	1.321994	0.073381	15.288532	41.310000	0.994800	3.410000	0.550000	12.460000	8
275	6.400000	0.524500	0.251700	2.996469	0.109936	15.039768	30.580000	0.996700	3.050000	0.670000	11.680000	8
276	8.720000	0.652700	0.379200	1.708120	0.097907	10.407987	43.520000	0.997500	3.300000	0.520000	12.690000	9
277	5.500000	0.633200	0.285800	2.538395	0.100688	12.773793	56.570000	0.997500	3.040000	0.730000	6.480000	5
278	6.160000	0.510200	0.306700	0.941347	0.112607	8.292476	41.280000	0.996500	3.360000	0.490000	10.250000	7
279	6.400000	0.409700	0.307300	2.597935	0.073687	15.935383	62.930000	0.995900	3.240000	0.560000	10.520000	8
280	5.700000	0.429300	0.274800	2.480223	0.100035	10.569654	27.260000	0.994400	3.300000	0.590000	10.160000	7
281	5.780000	0.503900	0.296400	0.971537	0.067949	17.695156	32.560000	0.996000	3.160000	0.480000	10.310000	7
282	5.380000	0.483300	0.221300	4.231206	0.104965	17.617525	33.080000	0.996400	3.420000	0.680000	10.660000	8
283	6.650000	0.685800	0.342400	3.122348	0.057433	4.476958	40.170000	0.997000	3.380000	0.750000	11.820000	8
284	6.770000	0.352000	0.332300	1.410333	0.063395	19.173215	49.330000	0.995700	3.450000	0.650000	11.750000	8
285	6.380000	0.513600	0.279500	1.492487	0.114962	18.398615	34.720000	0.999600	3.190000	0.520000	11.930000	8
286	5.220000	0.413400	0.270300	2.250998	0.092178	15.538498	40.210000	0.995700	3.380000	0.460000	12.780000	8
287	8.700000	0.531700	0.208000	1.932399	0.086584	4.034759	45.770000	0.998300	3.710000	0.840000	12.190000	9

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
288	5.610000	0.558200	0.321500	2.407096	0.076394	5.624226	41.430000	1.001100	3.150000	0.900000	9.400000	7
289	7.530000	0.479500	0.257200	0.332192	0.072381	18.974705	40.770000	0.999600	3.290000	0.700000	9.590000	7
290	5.910000	0.573000	0.300500	4.192350	0.078507	12.429479	39.360000	0.997500	3.240000	0.700000	9.260000	7
291	8.000000	0.500100	0.198000	1.782581	0.078230	16.457016	54.370000	0.995400	3.180000	0.680000	10.010000	8
292	8.350000	0.502100	0.301600	3.712087	0.093644	0.860177	32.160000	0.998700	3.360000	0.530000	12.220000	9
293	6.150000	0.478200	0.261200	2.331977	0.114027	17.390053	55.540000	0.993900	3.340000	0.630000	9.660000	7
294	4.890000	0.585100	0.270600	4.947813	0.063201	11.317318	34.180000	0.994300	3.130000	0.570000	11.300000	8
295	8.030000	0.533900	0.199100	3.358946	0.083588	11.164186	46.720000	0.996800	3.270000	0.610000	8.920000	7
296	9.450000	0.677300	0.304000	3.562408	0.096228	19.876338	45.720000	0.996600	3.120000	0.820000	10.150000	9
297	7.700000	0.647000	0.239400	3.695747	0.074475	13.186138	40.030000	0.996400	3.060000	0.550000	10.430000	8
298	7.390000	0.575400	0.267600	2.583496	0.096455	16.771801	40.580000	0.997900	3.360000	0.540000	13.270000	9
299	8.180000	0.304100	0.310200	2.650714	0.052458	10.724338	44.610000	0.995100	3.380000	0.470000	7.310000	7
300	8.120000	0.371600	0.265700	2.374550	0.126022	24.729420	38.030000	0.998800	3.230000	0.620000	11.420000	9
301	6.210000	0.618600	0.369300	2.861546	0.086781	10.943214	33.800000	0.997400	3.200000	0.540000	12.480000	9
302	6.410000	0.472400	0.225100	2.575772	0.079114	18.947294	51.340000	0.995000	3.310000	0.430000	9.140000	7
303	7.930000	0.543500	0.282000	2.862102	0.065735	12.358221	36.990000	0.998500	3.360000	0.550000	9.310000	8
304	7.030000	0.457000	0.290700	1.706335	0.074698	15.741114	40.620000	0.998100	3.560000	0.590000	8.740000	7
305	8.780000	0.571800	0.219100	2.083406	0.094812	13.995443	38.040000	0.996700	3.340000	0.610000	12.430000	9
306	6.350000	0.615800	0.274400	3.054366	0.127802	13.701364	42.900000	0.993700	3.480000	0.580000	9.660000	7
307	8.100000	0.399000	0.260300	2.520993	0.054030	13.440347	47.360000	0.993100	3.440000	0.520000	12.790000	9
308	7.610000	0.438600	0.281300	2.984646	0.078045	10.460882	32.970000	0.996100	3.150000	0.610000	12.260000	9
309	7.050000	0.353600	0.292700	3.170971	0.057553	16.939567	17.120000	0.993300	3.140000	0.610000	11.390000	8
310	8.610000	0.543300	0.339900	3.387991	0.055791	16.114290	61.920000	0.999100	3.320000	0.500000	10.530000	9
311	8.020000	0.353500	0.284400	2.993949	0.081798	14.678097	28.250000	1.000300	3.330000	0.610000	9.360000	8
312	5.990000	0.483400	0.297400	2.267729	0.069983	21.585557	42.510000	0.994500	3.170000	0.680000	11.470000	8
313	7.970000	0.572000	0.345000	1.634773	0.086684	19.146090	30.640000	0.999500	3.230000	0.530000	9.860000	8
314	8.850000	0.725800	0.190800	3.657857	0.093882	11.482919	39.540000	0.996600	3.260000	0.540000	12.060000	10
315	7.040000	0.556800	0.256900	1.807325	0.054986	15.619703	21.790000	0.995900	3.240000	0.540000	9.400000	7
316	6.900000	0.645300	0.271900	2.500117	0.069376	20.255629	60.250000	0.998700	3.390000	0.670000	9.010000	7
317	6.400000	0.545900	0.192200	4.117719	0.074471	14.361947	38.000000	0.997700	3.330000	0.430000	11.260000	8
318	7.180000	0.550900	0.273800	1.707017	0.036614	15.077609	38.670000	0.995100	3.410000	0.590000	9.300000	7
319	8.020000	0.498900	0.152200	2.227537	0.074847	12.989072	48.200000	0.997100	3.270000	0.450000	7.970000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
320	6.220000	0.481700	0.305300	2.618493	0.054498	12.612939	33.030000	0.997700	3.210000	0.650000	10.240000	7
321	5.580000	0.637400	0.196100	0.713491	0.075561	19.342314	22.920000	1.000800	3.330000	0.590000	12.750000	8
322	6.750000	0.557500	0.207400	1.431024	0.079070	16.098404	53.470000	0.997200	3.490000	0.700000	11.310000	8
323	5.540000	0.553600	0.296200	3.751365	0.042471	18.161486	19.540000	0.996800	3.450000	0.520000	11.540000	8
324	7.830000	0.459200	0.186600	2.952096	0.057729	15.804114	42.340000	0.997800	3.360000	0.690000	10.430000	8
325	6.690000	0.485500	0.372700	3.325522	0.087892	12.676287	25.230000	0.994800	3.130000	0.540000	8.700000	7
326	5.090000	0.726700	0.275800	2.755808	0.097796	9.712628	43.910000	0.997500	3.220000	0.540000	13.780000	9
327	6.780000	0.513200	0.265100	0.547161	0.117915	13.278282	46.040000	0.994000	3.240000	0.520000	12.370000	9
328	6.970000	0.652600	0.330200	1.481452	0.087016	17.786590	38.370000	1.000800	3.400000	0.560000	9.630000	7
329	7.740000	0.468000	0.266000	0.273802	0.066872	17.193724	34.370000	0.996500	3.580000	0.590000	12.990000	9
330	7.030000	0.600200	0.282000	3.141722	0.061606	6.990187	32.170000	0.995900	3.220000	0.500000	10.880000	8
331	9.440000	0.549000	0.262200	5.210260	0.054500	24.021371	39.760000	0.999800	3.250000	0.550000	10.970000	9
332	6.580000	0.479600	0.244900	0.932625	0.100549	11.802985	35.780000	0.994500	3.370000	0.690000	10.570000	7
333	7.130000	0.584900	0.288600	3.571139	0.052788	14.547620	30.540000	0.994700	3.360000	0.610000	9.720000	8
334	7.080000	0.365700	0.296300	3.589476	0.064472	16.059114	37.090000	0.995600	3.230000	0.740000	10.780000	8
335	6.860000	0.577500	0.206300	2.686730	0.077443	23.337538	35.630000	0.995100	3.350000	0.660000	9.380000	7
336	7.370000	0.598700	0.225900	1.129488	0.105506	10.811204	67.710000	0.999300	3.490000	0.630000	7.530000	6
337	7.850000	0.547300	0.237000	1.633314	0.092210	10.935254	36.560000	0.993900	3.150000	0.600000	10.580000	8
338	8.810000	0.651100	0.268500	0.479984	0.077258	10.065951	34.870000	0.996900	3.280000	0.670000	9.740000	8
339	5.320000	0.513200	0.287300	2.374437	0.092664	16.119121	46.890000	0.994200	3.290000	0.600000	11.130000	8
340	6.590000	0.505100	0.377800	2.717518	0.118461	17.801230	59.050000	0.993100	3.470000	0.640000	9.850000	7
341	6.660000	0.555500	0.283800	3.322049	0.073276	15.863152	31.710000	0.991600	3.340000	0.670000	10.330000	8
342	8.330000	0.606800	0.261300	2.295817	0.102866	24.239452	38.380000	0.998200	3.260000	0.530000	14.350000	10
343	6.770000	0.577000	0.234300	1.652215	0.092306	13.306446	33.060000	0.994000	3.140000	0.790000	11.800000	8
344	4.930000	0.497300	0.319300	1.809884	0.104917	16.061237	52.220000	0.994800	3.230000	0.670000	12.810000	8
345	7.310000	0.420500	0.269400	2.368372	0.082935	6.100477	47.310000	0.996700	3.220000	0.470000	9.970000	8
346	7.160000	0.586300	0.287100	2.801390	0.066211	3.129885	46.530000	0.997500	3.180000	0.740000	10.540000	8
347	7.420000	0.441000	0.270000	3.890970	0.059108	17.604930	31.730000	0.994200	3.200000	0.480000	9.340000	8
348	5.950000	0.438200	0.297500	4.546487	0.076111	17.617986	41.150000	0.997100	3.340000	0.690000	11.430000	8
349	9.260000	0.454500	0.293900	2.492055	0.059769	9.218303	51.070000	0.999300	3.290000	0.480000	9.540000	8
350	6.810000	0.525800	0.288700	1.422155	0.051341	14.677630	55.930000	0.996500	3.210000	0.470000	12.500000	9
351	6.970000	0.440400	0.270200	3.728424	0.126851	18.017173	37.180000	0.994700	3.280000	0.610000	14.230000	10

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
352	6.120000	0.406400	0.274700	5.056970	0.061416	13.450264	45.690000	0.993500	3.330000	0.740000	9.750000	8
353	6.080000	0.454100	0.289100	1.746250	0.070303	10.901440	50.320000	0.996300	3.210000	0.610000	10.670000	8
354	5.730000	0.501700	0.173800	2.002545	0.082611	14.634209	42.860000	0.996000	3.220000	0.550000	10.320000	7
355	6.730000	0.565400	0.268300	2.379659	0.116063	24.969144	51.330000	0.997800	3.330000	0.490000	12.020000	8
356	6.050000	0.526700	0.319000	2.522186	0.093313	19.045924	20.650000	0.997000	3.340000	0.710000	10.670000	8
357	9.670000	0.412000	0.246000	1.823585	0.107858	12.803415	46.270000	0.994900	3.230000	0.650000	13.490000	10
358	4.930000	0.542900	0.165500	1.113297	0.083432	19.475222	40.740000	0.993100	3.290000	0.550000	10.750000	7
359	5.850000	0.552300	0.200700	3.112337	0.080643	16.352163	48.190000	0.993200	3.370000	0.580000	8.520000	7
360	6.720000	0.474500	0.273800	2.364824	0.084251	15.383015	61.780000	0.996200	3.350000	0.720000	10.890000	8
361	8.010000	0.440400	0.234000	3.629084	0.104579	16.685344	47.770000	0.995900	3.170000	0.740000	9.590000	8
362	6.700000	0.440300	0.276700	3.044330	0.062162	16.709280	23.960000	0.996100	3.280000	0.650000	8.920000	7
363	8.010000	0.466800	0.269100	3.520117	0.068200	8.430143	30.010000	0.994800	3.240000	0.590000	10.700000	8
364	6.020000	0.741400	0.246500	2.563000	0.098637	16.298541	47.290000	0.997300	3.230000	0.540000	11.350000	8
365	7.270000	0.431100	0.224300	3.201429	0.108010	13.255621	47.780000	0.997000	3.220000	0.540000	10.880000	8
366	9.290000	0.546600	0.279800	1.772646	0.050941	14.759836	57.390000	0.999100	3.140000	0.770000	8.440000	7
367	6.040000	0.448600	0.273400	3.002550	0.070304	10.347409	49.150000	0.996500	3.520000	0.620000	9.620000	7
368	7.700000	0.469400	0.263800	3.511410	0.089951	16.948359	30.670000	0.996100	3.290000	0.630000	11.090000	9
369	7.450000	0.449400	0.313600	3.828019	0.092097	16.003159	62.700000	0.996900	3.430000	0.770000	9.790000	8
370	4.500000	0.600100	0.280100	2.206389	0.103785	14.855992	36.790000	0.995300	3.320000	0.400000	12.950000	8
371	6.490000	0.557900	0.240200	3.100355	0.108980	16.333043	42.910000	0.997800	3.040000	0.790000	11.070000	8
372	8.560000	0.507100	0.252100	3.806732	0.071741	16.776166	33.350000	0.996600	3.340000	0.510000	7.770000	7
373	7.360000	0.570300	0.266900	0.944377	0.102229	19.613194	47.440000	0.996800	3.510000	0.460000	10.520000	8
374	5.750000	0.594300	0.276200	2.143576	0.062630	7.787847	55.490000	0.998000	3.300000	0.480000	9.460000	7
375	8.030000	0.434900	0.336800	3.085092	0.101195	23.385419	54.570000	0.999300	3.250000	0.450000	10.640000	8
376	6.630000	0.574700	0.354400	2.217520	0.076467	15.334663	40.650000	0.996400	3.250000	0.680000	11.760000	8
377	7.630000	0.448200	0.246600	1.846335	0.088969	13.092219	40.010000	0.995400	3.280000	0.660000	7.670000	7
378	7.650000	0.603800	0.219000	2.942740	0.095750	19.467292	47.760000	0.997000	3.440000	0.700000	8.820000	7
379	5.860000	0.594000	0.242900	2.035573	0.097735	14.702458	37.690000	0.994800	3.250000	0.500000	9.890000	7
380	8.150000	0.560400	0.291000	2.580966	0.087562	23.306655	50.360000	0.995100	3.180000	0.660000	11.260000	9
381	5.990000	0.499000	0.311600	0.958892	0.086583	16.034302	53.690000	0.999400	3.350000	0.640000	12.640000	8
382	5.630000	0.467400	0.249600	2.040956	0.054856	19.894155	43.930000	0.995700	3.460000	0.580000	12.350000	8
383	6.140000	0.493600	0.224300	2.791488	0.089053	15.194088	34.790000	0.993900	3.180000	0.710000	8.510000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
384	6.780000	0.596900	0.289100	2.411083	0.067099	13.333775	39.640000	0.995300	3.540000	0.530000	11.190000	8
385	7.330000	0.451800	0.301200	2.466602	0.070182	18.483152	53.930000	0.994700	3.260000	0.370000	11.000000	8
386	6.270000	0.525000	0.321700	2.828929	0.088173	22.505801	69.960000	0.995300	3.450000	0.710000	10.260000	8
387	8.090000	0.345200	0.238100	3.605823	0.111787	21.087938	48.200000	0.992700	3.330000	0.680000	11.440000	9
388	7.500000	0.546000	0.286400	2.267590	0.099798	18.284122	34.260000	0.995600	3.390000	0.550000	9.440000	7
389	6.370000	0.416400	0.188400	2.488689	0.078592	19.246693	33.170000	0.994800	3.340000	0.600000	10.030000	7
390	8.270000	0.388200	0.264700	2.586152	0.076243	20.144902	40.610000	0.998500	3.290000	0.590000	12.420000	9
391	8.590000	0.571900	0.305900	2.033443	0.065721	20.172002	49.470000	0.998000	3.080000	0.560000	11.440000	9
392	7.080000	0.541000	0.344200	1.725369	0.081118	20.638984	27.240000	0.994900	3.010000	0.640000	6.650000	6
393	6.940000	0.475700	0.285100	3.355592	0.033566	5.178630	41.560000	0.993000	3.320000	0.610000	10.610000	8
394	5.070000	0.489800	0.257900	1.348947	0.077536	11.600268	46.570000	0.994700	3.280000	0.570000	8.960000	6
395	6.710000	0.747100	0.199700	3.105590	0.067120	18.936677	48.120000	0.997800	3.360000	0.590000	13.010000	9
396	6.850000	0.500600	0.281400	2.300991	0.076647	18.664002	41.020000	0.995700	3.130000	0.460000	11.960000	8
397	7.490000	0.499900	0.301600	2.170902	0.049785	5.024607	25.780000	0.993500	3.230000	0.530000	10.090000	8
398	7.000000	0.585200	0.320700	2.835357	0.071706	13.727142	55.190000	0.996000	3.280000	0.530000	12.000000	9
399	7.490000	0.528700	0.282200	2.986452	0.109915	7.035618	54.500000	0.998100	3.410000	0.590000	9.630000	8
400	9.040000	0.618700	0.222200	1.472818	0.083818	8.617828	41.890000	0.995300	3.400000	0.610000	11.880000	9
401	6.560000	0.547700	0.297700	2.475026	0.057632	15.272540	35.980000	0.994900	3.160000	0.670000	10.990000	8
402	6.610000	0.596100	0.354500	2.067896	0.070894	11.824803	38.420000	0.994700	3.200000	0.580000	11.620000	8
403	5.630000	0.564300	0.256900	1.768991	0.082611	12.549119	37.250000	0.995400	3.340000	0.540000	8.280000	6
404	7.190000	0.584500	0.229900	0.418830	0.034283	12.830522	42.160000	0.996400	3.330000	0.690000	11.000000	8
405	8.370000	0.515700	0.253500	3.359448	0.127204	16.220053	44.210000	0.998600	3.330000	0.670000	9.310000	8
406	5.100000	0.542300	0.269300	3.398874	0.085185	19.108549	27.310000	0.996500	3.450000	0.590000	9.810000	7
407	6.400000	0.492900	0.243800	1.343205	0.085138	10.253950	24.740000	0.997600	3.350000	0.510000	10.040000	7
408	7.240000	0.580400	0.305300	2.401517	0.095616	14.130071	37.600000	0.996500	3.380000	0.730000	10.070000	8
409	8.220000	0.385400	0.291500	1.283694	0.091234	16.465796	41.590000	0.994100	3.390000	0.540000	9.800000	8
410	7.660000	0.592600	0.253300	2.151383	0.108757	13.501391	26.530000	0.998700	3.260000	0.640000	10.600000	8
411	7.590000	0.619800	0.269000	1.868766	0.114018	18.676883	43.090000	0.994200	3.160000	0.510000	10.840000	8
412	6.930000	0.594200	0.193000	3.856810	0.063679	15.204789	50.870000	0.994800	3.500000	0.660000	9.330000	7
413	7.780000	0.509600	0.286100	1.135521	0.041170	20.989255	35.210000	0.997400	3.320000	0.570000	9.970000	7
414	8.420000	0.570500	0.200300	0.718011	0.046080	9.664399	49.830000	0.996900	3.220000	0.660000	10.740000	8
415	5.150000	0.442300	0.256100	2.152543	0.124049	27.462525	31.550000	0.993900	3.210000	0.560000	12.530000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
416	8.070000	0.603700	0.246900	2.213052	0.058457	11.975991	44.690000	0.993400	3.380000	0.770000	9.770000	8
417	7.080000	0.410100	0.293300	4.467985	0.110102	22.008179	29.130000	0.997900	3.140000	0.600000	12.210000	9
418	6.560000	0.579400	0.247800	1.742975	0.058667	20.705134	38.030000	0.998000	3.100000	0.620000	8.830000	7
419	4.270000	0.573300	0.267700	3.977833	0.105938	23.437888	27.740000	0.996200	3.200000	0.660000	9.300000	7
420	5.540000	0.560700	0.344800	3.007246	0.105734	18.979668	39.330000	0.994000	3.530000	0.760000	11.010000	8
421	9.240000	0.475300	0.191500	4.155290	0.084673	11.498482	45.580000	0.996000	3.390000	0.580000	11.320000	9
422	6.370000	0.596000	0.275700	2.780193	0.067259	0.194679	53.470000	0.998600	3.410000	0.510000	9.100000	7
423	5.900000	0.336300	0.313200	0.889891	0.103006	11.283639	32.210000	0.996600	3.270000	0.600000	8.840000	6
424	6.650000	0.597700	0.238600	1.575708	0.068950	20.397266	35.830000	0.994700	3.340000	0.440000	13.380000	9
425	6.310000	0.539100	0.271000	3.048395	0.111237	16.179124	22.280000	0.997600	3.330000	0.460000	10.740000	8
426	7.350000	0.625100	0.201900	1.617053	0.068299	9.871926	45.850000	0.999900	3.280000	0.790000	9.320000	7
427	9.020000	0.540000	0.189600	4.893570	0.107741	8.918559	31.050000	1.000300	3.290000	0.610000	11.330000	9
428	6.500000	0.703800	0.306100	0.673484	0.066152	9.172940	31.250000	0.997100	3.280000	0.600000	12.550000	8
429	7.390000	0.425800	0.253600	1.873160	0.065157	12.612165	38.710000	0.995900	3.250000	0.530000	12.360000	9
430	5.820000	0.580900	0.204400	2.972711	0.094087	14.241464	52.150000	0.993000	3.300000	0.430000	8.500000	7
431	9.020000	0.431400	0.246300	2.522131	0.080395	22.652647	30.810000	0.994500	3.240000	0.720000	9.480000	8
432	7.430000	0.507400	0.300200	2.030135	0.092827	16.429142	51.500000	0.998600	3.280000	0.620000	9.330000	7
433	5.900000	0.594200	0.297600	3.950006	0.135790	12.048423	47.400000	0.997600	3.250000	0.490000	10.930000	8
434	8.290000	0.582500	0.322400	2.577471	0.061565	16.891051	40.440000	0.996400	3.260000	0.550000	10.430000	8
435	8.640000	0.728000	0.244800	3.578521	0.073012	11.019081	48.990000	0.994300	3.360000	0.530000	8.730000	8
436	7.390000	0.484900	0.238600	2.081945	0.082742	22.505652	39.640000	0.997500	3.400000	0.640000	9.480000	7
437	5.230000	0.648600	0.286500	3.543146	0.058957	7.474838	28.660000	0.997200	3.270000	0.740000	9.560000	7
438	9.340000	0.494600	0.320000	2.734339	0.046923	17.943349	40.110000	0.997000	3.350000	0.470000	8.440000	8
439	7.570000	0.449900	0.251300	0.880717	0.061604	8.250626	38.540000	0.994500	3.330000	0.630000	12.410000	9
440	8.600000	0.357700	0.317900	1.288970	0.094800	12.891696	28.470000	0.994600	3.350000	0.560000	10.220000	8
441	6.540000	0.536300	0.253300	3.629842	0.065844	18.221496	50.340000	0.993400	3.300000	0.490000	9.860000	8
442	6.720000	0.467900	0.371900	2.502872	0.065997	17.224703	32.170000	0.991600	3.280000	0.510000	12.590000	9
443	7.330000	0.604800	0.184000	3.645732	0.089715	13.938764	24.080000	0.994900	3.260000	0.770000	8.420000	7
444	8.540000	0.467200	0.346700	3.228497	0.059827	15.489407	31.010000	0.996400	3.290000	0.440000	11.320000	9
445	7.370000	0.472300	0.195100	1.381916	0.098364	7.246241	43.880000	0.995100	3.300000	0.580000	12.700000	9
446	5.690000	0.555500	0.331200	1.310306	0.118620	7.468223	51.210000	0.998200	3.170000	0.590000	11.620000	8
447	7.510000	0.692100	0.274300	2.398164	0.085701	17.727426	42.670000	0.993400	3.230000	0.550000	13.770000	10

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
448	9.160000	0.411100	0.247300	2.669691	0.088921	23.905225	41.620000	0.998600	3.140000	0.680000	9.770000	8
449	7.280000	0.621800	0.224600	1.804364	0.065790	19.161136	62.780000	0.997700	3.210000	0.660000	9.990000	7
450	7.360000	0.607400	0.223600	3.011043	0.085690	16.264801	31.050000	0.993500	3.310000	0.710000	10.590000	8
451	5.680000	0.497900	0.304100	2.285744	0.089651	19.994420	34.520000	1.001200	3.340000	0.770000	10.820000	8
452	5.520000	0.587500	0.293000	1.743231	0.054650	15.713892	37.250000	0.995500	3.120000	0.710000	9.290000	7
453	6.430000	0.491600	0.260600	2.755036	0.060829	19.524005	28.580000	0.994000	3.380000	0.650000	11.650000	8
454	6.810000	0.757100	0.268700	1.856956	0.063845	16.997211	33.870000	0.994100	3.350000	0.430000	9.700000	7
455	7.320000	0.508800	0.226400	1.049261	0.084238	15.605630	57.820000	0.995000	3.560000	0.550000	9.640000	7
456	7.400000	0.528000	0.263400	4.072201	0.069464	7.114219	38.600000	0.995300	3.430000	0.660000	8.330000	7
457	9.120000	0.487400	0.314300	0.532292	0.083868	16.846122	43.470000	0.994800	3.150000	0.650000	12.740000	9
458	7.270000	0.350700	0.224600	0.842434	0.070229	16.798468	29.860000	0.996600	3.250000	0.480000	11.120000	8
459	8.480000	0.493700	0.296100	3.329353	0.101949	18.844894	38.290000	0.998500	3.550000	0.550000	10.010000	8
460	7.150000	0.543200	0.246900	2.763447	0.076405	14.373871	51.930000	0.994700	3.060000	0.670000	8.350000	7
461	8.940000	0.670100	0.193600	1.932566	0.059741	16.641476	34.510000	0.996500	3.360000	0.570000	12.690000	9
462	4.960000	0.569200	0.323100	4.440783	0.112617	12.465382	58.450000	0.998200	3.460000	0.630000	9.860000	7
463	6.480000	0.501100	0.201300	2.105632	0.121379	22.854476	44.040000	0.995000	3.390000	0.630000	10.000000	7
464	8.380000	0.526000	0.246800	2.387558	0.095429	12.453220	54.510000	0.994600	3.280000	0.590000	10.560000	8
465	6.990000	0.552700	0.323500	2.515557	0.089269	12.155192	49.780000	0.996300	3.380000	0.670000	12.160000	9
466	8.320000	0.482100	0.230600	3.112418	0.079487	15.239886	47.770000	0.989600	3.350000	0.550000	11.910000	9
467	7.660000	0.588200	0.317100	3.190521	0.088894	6.636175	45.050000	0.995900	3.270000	0.590000	10.230000	8
468	8.340000	0.682500	0.247600	3.862358	0.058562	10.614603	44.030000	1.000100	3.360000	0.590000	11.870000	9
469	7.940000	0.483700	0.265300	2.032446	0.056956	6.944377	52.740000	0.995100	3.270000	0.470000	10.980000	8
470	8.010000	0.640800	0.364200	2.454132	0.091683	23.272248	33.350000	0.999300	3.420000	0.420000	8.740000	7
471	8.990000	0.607600	0.326800	2.200401	0.056264	17.048068	44.670000	0.996800	3.350000	0.550000	9.410000	8
472	8.380000	0.573700	0.274300	1.171112	0.116410	12.312957	26.540000	0.995500	3.250000	0.400000	10.370000	8
473	8.390000	0.531200	0.237300	2.170765	0.064299	10.120089	56.310000	0.996500	3.380000	0.750000	9.790000	8
474	7.220000	0.553800	0.271300	2.832739	0.090951	25.390728	48.150000	0.996900	3.150000	0.680000	10.610000	8
475	6.500000	0.498300	0.352500	2.614594	0.055221	6.903835	45.340000	0.994700	3.260000	0.620000	10.480000	8
476	6.410000	0.703700	0.378600	3.928078	0.079626	15.075027	34.680000	0.993100	3.530000	0.630000	15.020000	10
477	8.100000	0.448200	0.239000	2.698687	0.088356	21.620045	39.950000	0.995500	3.320000	0.460000	9.990000	8
478	4.270000	0.633500	0.342200	1.509397	0.071422	11.865964	44.680000	0.994600	3.350000	0.850000	11.820000	7
479	5.630000	0.675000	0.191100	1.984446	0.067377	10.036401	17.620000	0.997200	3.330000	0.700000	9.410000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
480	6.040000	0.487700	0.299400	1.683591	0.074606	8.415551	45.090000	0.997400	3.270000	0.590000	10.950000	8
481	6.900000	0.636600	0.288700	1.899205	0.106108	19.172927	36.120000	0.995100	3.260000	0.650000	8.890000	7
482	4.040000	0.534400	0.322100	2.411620	0.100236	11.442534	53.690000	0.997000	3.230000	0.470000	11.520000	7
483	8.710000	0.526200	0.228400	3.262356	0.102123	10.210555	47.780000	0.996800	3.380000	0.560000	9.780000	8
484	7.920000	0.512500	0.277300	3.363942	0.100776	6.260714	46.730000	0.991500	3.260000	0.620000	9.780000	8
485	9.580000	0.358600	0.176900	1.586992	0.110396	11.708287	51.860000	0.997900	3.370000	0.470000	10.230000	8
486	8.470000	0.574800	0.238500	2.920436	0.096237	18.971670	48.870000	0.993300	3.450000	0.480000	9.260000	8
487	8.440000	0.664400	0.269100	2.431717	0.034370	18.089045	63.010000	0.995500	3.310000	0.510000	13.780000	10
488	9.900000	0.449500	0.279700	2.148776	0.092860	14.744247	45.470000	0.999200	3.290000	0.560000	12.640000	10
489	6.510000	0.604700	0.409600	1.832077	0.089017	12.107144	54.450000	0.997700	3.290000	0.730000	12.260000	8
490	5.400000	0.511500	0.244500	1.764321	0.075573	11.405507	56.360000	0.993300	3.250000	0.640000	12.920000	9
491	6.920000	0.410700	0.271000	1.968170	0.050548	7.556696	39.770000	0.996100	3.260000	0.640000	10.330000	8
492	6.210000	0.619800	0.212400	3.543511	0.066386	16.809951	50.340000	0.996100	3.360000	0.440000	12.670000	9
493	6.890000	0.688600	0.175700	3.440458	0.073336	15.540607	46.580000	0.996500	3.200000	0.550000	10.130000	8
494	5.940000	0.440600	0.314900	3.329801	0.097498	14.527711	37.930000	0.993300	3.360000	0.460000	8.600000	7
495	7.880000	0.541600	0.315300	0.225288	0.094400	16.501555	50.210000	1.000400	3.210000	0.630000	6.420000	6
496	7.820000	0.376000	0.201200	3.743606	0.056809	18.885695	47.210000	0.996900	3.310000	0.550000	14.560000	10
497	7.170000	0.515800	0.185500	2.803720	0.092192	17.949297	66.990000	0.996300	3.080000	0.720000	9.950000	8
498	7.570000	0.568600	0.238200	3.365912	0.041608	5.066432	48.370000	0.997900	3.380000	0.590000	9.730000	8
499	7.030000	0.695300	0.353400	2.328736	0.071467	13.300705	49.990000	0.995600	3.480000	0.520000	8.370000	7
500	8.100000	0.675800	0.195600	2.684752	0.079678	16.506123	53.750000	0.997200	3.240000	0.720000	12.750000	9
501	7.280000	0.684200	0.304100	3.834531	0.094940	14.675257	45.250000	0.994500	3.270000	0.600000	10.240000	8
502	6.880000	0.467300	0.276600	3.513471	0.074843	11.967985	42.310000	0.994700	3.350000	0.490000	11.340000	8
503	8.320000	0.495500	0.254900	1.572885	0.091232	13.856693	41.270000	0.997100	3.460000	0.430000	10.720000	8
504	8.710000	0.353600	0.239800	1.705161	0.085907	23.880561	25.590000	0.996000	3.380000	0.590000	11.090000	8
505	8.800000	0.448500	0.282200	2.948879	0.089751	21.651234	36.730000	0.995900	3.160000	0.640000	11.440000	9
506	6.010000	0.374800	0.254500	2.697899	0.093253	15.401903	57.350000	0.996700	3.300000	0.610000	10.860000	8
507	6.560000	0.556600	0.250000	1.610837	0.074350	13.029474	47.470000	0.993700	3.430000	0.530000	10.800000	8
508	5.160000	0.450300	0.259600	2.441914	0.097623	17.593541	38.450000	0.990800	3.460000	0.600000	10.210000	7
509	6.910000	0.409900	0.325600	1.818528	0.111087	19.686043	53.400000	0.995500	3.330000	0.500000	10.680000	8
510	7.700000	0.484500	0.280600	3.083875	0.076810	16.764896	55.480000	0.993300	3.290000	0.510000	11.070000	8
511	7.040000	0.401500	0.273400	4.774703	0.034752	9.679204	42.530000	0.996700	3.310000	0.410000	10.650000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
512	9.520000	0.550900	0.339100	1.592333	0.093156	15.264855	64.660000	0.998200	3.320000	0.570000	8.660000	8
513	6.710000	0.548400	0.256600	2.943053	0.080442	15.803927	42.800000	0.995600	3.330000	0.660000	10.720000	8
514	5.890000	0.488400	0.341600	2.920881	0.089640	9.524993	37.960000	0.993200	3.240000	0.580000	11.930000	8
515	7.880000	0.446900	0.236200	2.299343	0.064069	15.755780	43.320000	0.995700	3.240000	0.590000	9.460000	8
516	7.380000	0.386100	0.296600	2.123260	0.070747	18.095698	43.210000	0.994300	3.450000	0.770000	8.740000	7
517	7.860000	0.575500	0.253800	2.154876	0.081135	17.793042	45.680000	0.998300	3.180000	0.780000	12.060000	9
518	7.560000	0.542900	0.266600	1.036157	0.076505	21.690791	40.780000	0.996000	3.230000	0.540000	9.930000	7
519	7.490000	0.566400	0.237800	0.524701	0.078908	8.299930	50.690000	0.998400	3.420000	0.620000	8.470000	7
520	4.650000	0.489400	0.255200	1.637873	0.070143	16.251877	28.920000	0.994400	3.210000	0.820000	9.880000	7
521	6.330000	0.498200	0.235000	1.896364	0.077388	12.521928	42.090000	0.996000	3.250000	0.480000	10.090000	7
522	6.490000	0.664200	0.290100	3.246488	0.093675	19.313465	38.680000	0.994500	3.300000	0.440000	10.430000	8
523	6.780000	0.459900	0.228800	1.398804	0.090753	20.102329	45.000000	0.997000	3.160000	0.530000	9.180000	7
524	6.660000	0.488700	0.296800	1.976396	0.054720	8.314577	20.190000	0.995400	3.660000	0.550000	11.650000	8
525	7.700000	0.594400	0.387400	3.572511	0.084273	13.208185	44.670000	0.994600	3.130000	0.750000	10.020000	8
526	7.920000	0.550300	0.192200	3.295768	0.065420	10.130896	41.310000	0.993200	3.410000	0.510000	9.500000	8
527	5.840000	0.315300	0.151400	2.978203	0.087472	14.516243	24.160000	0.997700	3.460000	0.490000	11.270000	8
528	8.020000	0.351200	0.220600	3.604378	0.103839	14.730291	43.970000	0.997200	3.240000	0.910000	8.570000	7
529	7.900000	0.453900	0.307200	5.154947	0.096423	21.530395	40.120000	0.994900	3.270000	0.550000	12.370000	10
530	7.760000	0.611000	0.234400	2.399773	0.066834	17.473150	54.200000	0.994500	3.220000	0.640000	9.410000	8
531	5.500000	0.587200	0.298900	3.110282	0.081859	20.270764	42.230000	0.997000	3.210000	0.630000	10.790000	8
532	7.730000	0.572000	0.317500	2.370983	0.087678	19.796378	45.680000	0.998500	3.390000	0.690000	11.780000	8
533	7.300000	0.582800	0.257400	2.316913	0.089107	9.726578	51.450000	0.988800	3.230000	0.610000	11.940000	9
534	8.350000	0.423100	0.314200	1.601682	0.062887	15.256976	46.650000	0.998300	3.120000	0.510000	9.820000	8
535	9.340000	0.580100	0.156500	4.191708	0.090585	19.756961	35.880000	0.996600	3.310000	0.620000	11.260000	9
536	9.110000	0.427900	0.311700	2.693052	0.086385	21.940515	48.430000	0.997000	3.320000	0.650000	10.830000	9
537	7.340000	0.614700	0.310000	4.033969	0.060880	18.759154	41.580000	0.995100	3.330000	0.590000	10.440000	8
538	7.200000	0.468900	0.265000	2.883643	0.087228	6.428336	35.850000	0.994000	3.110000	0.580000	11.570000	8
539	7.960000	0.548200	0.320200	1.634377	0.071079	17.226258	43.030000	0.996600	3.540000	0.710000	13.070000	9
540	5.860000	0.332600	0.342000	2.517868	0.062046	14.677744	26.660000	0.992700	3.390000	0.490000	9.020000	7
541	5.460000	0.385100	0.366600	3.147999	0.071998	18.528922	34.560000	0.998600	3.200000	0.680000	8.930000	7
542	6.630000	0.629100	0.367100	2.718142	0.060989	11.488680	26.730000	0.997000	3.190000	0.630000	10.780000	8
543	8.660000	0.589200	0.272800	0.683713	0.065634	15.445715	39.640000	0.994000	3.270000	0.670000	11.650000	9

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
544	6.800000	0.398200	0.262900	2.517016	0.109616	13.423727	26.850000	0.997200	3.430000	0.560000	12.890000	9
545	9.000000	0.648600	0.266100	2.112445	0.054088	21.383961	43.420000	0.993000	3.380000	0.680000	12.850000	9
546	3.850000	0.410900	0.136300	2.086347	0.095610	18.078517	50.350000	0.997200	3.230000	0.640000	10.600000	7
547	5.300000	0.522000	0.304900	1.130890	0.089340	13.756951	48.340000	0.997600	3.320000	0.550000	11.320000	8
548	7.050000	0.472000	0.387500	4.388867	0.110463	11.890099	26.970000	0.996100	3.450000	0.440000	11.190000	9
549	8.270000	0.427700	0.298300	3.483473	0.120026	12.879710	26.120000	0.997200	3.310000	0.380000	8.520000	7
550	7.120000	0.636800	0.198900	1.672915	0.077099	23.386548	33.860000	0.994000	3.150000	0.590000	14.340000	10
551	7.090000	0.688500	0.220300	2.276695	0.086333	14.018778	39.050000	0.991000	3.240000	0.520000	10.250000	8
552	7.050000	0.537800	0.223100	3.791837	0.081299	25.133883	24.950000	0.997400	3.190000	0.550000	12.440000	9
553	5.080000	0.672600	0.352900	0.874678	0.057943	15.907010	33.280000	0.998000	3.230000	0.520000	12.520000	8
554	8.590000	0.491900	0.295100	4.076438	0.071251	9.238537	33.330000	0.998500	3.330000	0.580000	10.550000	9
555	6.380000	0.530800	0.301900	2.863068	0.135368	20.655287	35.690000	0.995700	3.410000	0.590000	10.850000	8
556	8.510000	0.533100	0.287700	2.975129	0.088473	4.741238	18.610000	0.994000	3.240000	0.690000	8.340000	7
557	7.120000	0.404300	0.214400	2.339515	0.048876	15.525853	25.430000	0.991100	3.340000	0.510000	13.880000	10
558	8.480000	0.569900	0.222800	2.940855	0.092654	26.665773	34.600000	1.002600	3.400000	0.650000	9.880000	8
559	7.610000	0.591000	0.304000	4.457967	0.101080	23.442949	31.840000	0.997400	3.290000	0.490000	12.540000	9
560	7.070000	0.502700	0.274300	2.610178	0.094168	22.129964	38.200000	0.996800	3.120000	0.330000	8.190000	7
561	7.470000	0.350800	0.177100	1.813277	0.050804	19.803506	35.260000	0.994700	3.190000	0.640000	10.400000	8
562	5.430000	0.556800	0.309300	1.977106	0.085296	21.040547	41.050000	0.996400	3.330000	0.500000	10.750000	7
563	7.210000	0.368500	0.340800	3.544315	0.047370	10.850083	24.460000	0.996400	3.210000	0.720000	7.720000	7
564	9.260000	0.438900	0.270300	2.778174	0.075094	19.029848	37.810000	0.995200	3.150000	0.530000	9.160000	8
565	8.770000	0.533100	0.254200	2.736284	0.024259	16.915020	24.170000	0.996700	3.100000	0.560000	6.950000	7
566	6.020000	0.443000	0.338300	1.951046	0.043182	21.854586	45.480000	0.996000	3.510000	0.450000	10.380000	7
567	7.810000	0.545400	0.260200	3.913055	0.086648	23.319121	49.730000	0.999200	3.140000	0.670000	10.920000	9
568	7.500000	0.497400	0.239300	2.630563	0.102025	12.744904	31.340000	0.992700	3.350000	0.660000	9.150000	7
569	8.180000	0.357000	0.193100	1.693136	0.077684	7.751049	38.810000	0.995200	3.460000	0.630000	10.110000	8
570	7.310000	0.536800	0.245400	0.750176	0.093668	15.218507	44.510000	0.996200	3.370000	0.660000	10.440000	8
571	6.920000	0.578700	0.363400	1.275478	0.117683	22.535907	36.530000	0.996100	3.370000	0.470000	11.830000	8
572	8.800000	0.621200	0.328200	2.907593	0.059719	7.852781	41.050000	0.990500	3.230000	0.620000	11.060000	9
573	7.460000	0.483300	0.276000	1.619272	0.092645	13.889279	31.840000	0.995600	3.180000	0.510000	12.300000	9
574	8.710000	0.513900	0.269700	0.469041	0.105055	5.237295	55.570000	0.997100	3.400000	0.730000	10.580000	8
575	8.370000	0.370500	0.319500	1.659144	0.083634	11.667287	39.020000	0.990500	3.310000	0.550000	10.070000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
576	6.810000	0.716500	0.275100	2.352264	0.088069	16.854415	36.960000	0.998600	3.340000	0.670000	12.260000	9
577	7.000000	0.670500	0.206800	3.092183	0.089906	14.815048	47.510000	0.997400	3.270000	0.660000	11.780000	8
578	9.520000	0.516800	0.277200	0.032555	0.071198	10.796374	45.850000	1.000500	3.310000	0.470000	8.040000	7
579	7.430000	0.507500	0.278800	2.449133	0.105240	22.446659	23.640000	0.994200	3.460000	0.490000	9.410000	7
580	6.290000	0.227000	0.270600	3.400036	0.054449	12.914806	50.790000	0.994200	3.130000	0.600000	8.040000	7
581	5.760000	0.623500	0.282900	1.632272	0.071933	5.470994	37.740000	0.993600	3.420000	0.720000	11.190000	8
582	8.370000	0.576300	0.235400	1.923040	0.082679	24.732639	21.790000	0.995300	3.300000	0.600000	9.850000	8
583	7.390000	0.601300	0.277800	2.700872	0.098819	20.342958	37.400000	0.995300	3.450000	0.690000	13.390000	9
584	6.250000	0.479500	0.189800	1.507686	0.057874	16.562740	30.050000	0.991900	3.390000	0.570000	10.940000	8
585	8.010000	0.473100	0.224000	1.585377	0.098679	10.176614	44.260000	0.994000	3.250000	0.560000	12.420000	9
586	7.390000	0.396500	0.257800	2.383800	0.077572	9.698634	48.180000	0.997600	3.440000	0.690000	11.350000	9
587	5.210000	0.597800	0.300100	2.676972	0.100223	15.627448	40.040000	0.994400	3.410000	0.670000	8.700000	6
588	7.910000	0.645200	0.255100	3.074861	0.123317	15.755803	33.950000	0.999200	3.280000	0.500000	12.200000	9
589	8.800000	0.632400	0.292000	2.516209	0.098967	7.817836	30.320000	0.993000	3.180000	0.690000	12.470000	9
590	10.270000	0.538700	0.321100	2.502687	0.086697	10.010887	44.210000	0.997300	3.250000	0.690000	10.850000	9
591	7.240000	0.487300	0.391000	2.749387	0.087016	17.424235	38.560000	0.994300	3.320000	0.460000	10.820000	8
592	7.480000	0.414800	0.255300	1.626011	0.092877	8.698018	26.700000	0.996500	3.250000	0.660000	11.590000	8
593	9.130000	0.449800	0.237800	0.402441	0.092156	20.515609	47.460000	0.996100	3.420000	0.590000	9.040000	7
594	7.400000	0.566800	0.271900	1.598267	0.063066	13.069397	32.230000	0.997100	3.270000	0.730000	12.170000	9
595	7.530000	0.491500	0.279900	2.013372	0.084955	20.704249	45.800000	0.991900	3.510000	0.820000	12.600000	9
596	6.440000	0.684100	0.297300	1.681570	0.091178	12.143112	34.700000	0.997300	3.450000	0.730000	10.290000	8
597	5.530000	0.635200	0.310600	1.361971	0.061027	18.377924	32.940000	0.996200	3.450000	0.480000	11.670000	8
598	8.300000	0.459800	0.255900	3.562592	0.077844	16.224624	41.710000	0.995900	3.340000	0.370000	10.700000	9
599	5.670000	0.398400	0.306300	1.668960	0.052220	23.458225	60.530000	0.998700	3.380000	0.530000	9.970000	7
600	8.570000	0.465200	0.274100	2.132581	0.027209	11.745579	44.350000	0.999100	3.370000	0.760000	10.600000	8
601	6.250000	0.626500	0.331400	3.075273	0.076004	25.397866	32.270000	0.999100	3.230000	0.680000	10.580000	8
602	7.520000	0.467600	0.256100	2.939351	0.073546	22.226485	48.130000	0.993200	3.410000	0.500000	9.620000	7
603	6.750000	0.574600	0.277000	1.771848	0.110525	11.659732	37.210000	0.998000	3.410000	0.610000	8.570000	7
604	8.610000	0.463400	0.283500	1.611470	0.051439	12.093995	54.730000	0.995200	3.530000	0.650000	11.060000	8
605	7.560000	0.554300	0.326600	2.432894	0.091905	16.810052	25.020000	0.993600	3.350000	0.560000	12.770000	9
606	9.550000	0.572800	0.269800	1.807159	0.083762	18.815716	56.700000	0.995700	3.350000	0.620000	8.980000	8
607	5.900000	0.618600	0.218200	2.369098	0.101381	10.146468	46.870000	0.993400	3.380000	0.440000	10.120000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
608	7.700000	0.663300	0.185200	1.638350	0.071496	8.878123	30.900000	0.995500	3.100000	0.390000	12.420000	9
609	7.260000	0.651000	0.321700	2.915804	0.092107	6.324509	28.330000	0.997500	3.350000	0.580000	10.580000	8
610	7.540000	0.467000	0.302000	1.086872	0.060239	22.646677	49.630000	0.995100	3.340000	0.650000	12.250000	8
611	9.120000	0.505300	0.353100	2.286481	0.088986	14.898947	35.170000	0.996700	3.250000	0.510000	11.670000	9
612	7.900000	0.402600	0.274600	2.791431	0.082855	6.172613	28.340000	0.998700	3.270000	0.540000	11.160000	8
613	5.820000	0.496400	0.274300	2.792820	0.070151	13.601527	41.810000	0.996700	3.140000	0.700000	9.330000	7
614	7.840000	0.522400	0.279000	4.917832	0.102844	19.090754	45.300000	0.999700	3.100000	0.500000	10.510000	8
615	6.700000	0.479600	0.243200	2.270639	0.082710	17.013547	45.110000	0.996800	3.290000	0.690000	9.620000	7
616	6.630000	0.469600	0.234800	2.644146	0.094058	24.467325	28.370000	0.993500	3.450000	0.710000	9.610000	7
617	8.460000	0.623200	0.291900	2.406933	0.111196	16.013879	33.770000	0.994800	3.200000	0.580000	10.830000	8
618	6.480000	0.610700	0.329000	4.405202	0.106353	13.508882	41.150000	0.995900	3.400000	0.570000	10.540000	8
619	6.740000	0.559900	0.300200	3.507354	0.101508	16.458953	28.500000	0.996500	3.280000	0.460000	8.650000	7
620	7.240000	0.392200	0.246000	4.431466	0.075922	22.625999	37.850000	0.998000	3.300000	0.660000	13.990000	10
621	8.340000	0.540100	0.291200	1.924588	0.086988	18.295224	39.940000	0.994000	3.380000	0.540000	10.310000	8
622	7.900000	0.481600	0.278800	2.665390	0.091087	14.369773	40.080000	0.995500	3.270000	0.540000	9.720000	8
623	6.920000	0.651600	0.241800	2.551240	0.097064	9.741307	20.450000	0.996700	3.280000	0.450000	9.300000	7
624	6.870000	0.339800	0.208900	1.348436	0.091582	14.255835	35.270000	0.996700	3.200000	0.720000	12.000000	9
625	5.810000	0.464100	0.228500	2.843913	0.068993	8.469028	32.690000	0.999700	3.390000	0.650000	10.810000	8
626	6.290000	0.461300	0.329800	1.511597	0.075215	17.098206	33.110000	0.992500	3.340000	0.580000	13.540000	9
627	6.410000	0.473300	0.282700	3.553936	0.076100	17.050983	54.320000	0.997200	3.460000	0.640000	11.670000	9
628	7.020000	0.615800	0.239500	2.290906	0.072499	10.044097	44.660000	0.996600	3.260000	0.530000	7.380000	6
629	9.580000	0.284800	0.273800	0.979232	0.095382	11.024409	34.810000	0.996600	3.420000	0.690000	11.500000	9
630	6.390000	0.499200	0.300500	1.940263	0.044424	19.165080	53.540000	0.999200	3.230000	0.580000	7.860000	6
631	6.850000	0.605100	0.243000	2.547011	0.067757	14.787366	54.550000	0.994800	3.510000	0.570000	8.750000	7
632	4.740000	0.618000	0.231700	4.246120	0.073846	17.722372	38.340000	0.993200	3.290000	0.520000	9.040000	7
633	7.920000	0.465100	0.181200	3.367554	0.105217	12.032091	32.290000	0.993000	3.290000	0.670000	11.530000	9
634	5.310000	0.452000	0.324400	2.592654	0.060341	10.996413	45.440000	0.994900	3.340000	0.680000	11.210000	8
635	6.110000	0.554600	0.299400	3.376131	0.090421	13.515439	25.520000	0.996600	3.490000	0.510000	8.390000	7
636	8.450000	0.535100	0.303500	2.671809	0.082373	9.110153	41.580000	0.996100	3.400000	0.670000	10.020000	8
637	4.670000	0.526900	0.298100	1.610148	0.066828	12.117281	36.010000	0.999300	3.430000	0.600000	12.540000	8
638	7.320000	0.139900	0.168600	2.913033	0.121514	19.747501	22.610000	0.993500	3.400000	0.440000	10.940000	8
639	8.160000	0.407300	0.275500	3.360312	0.094255	11.816143	53.540000	0.996100	3.390000	0.780000	9.320000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
640	9.030000	0.433700	0.292500	5.550755	0.070037	22.859120	29.470000	0.994200	3.320000	0.630000	9.690000	9
641	6.100000	0.584300	0.273500	2.796552	0.103617	19.736182	16.560000	0.994400	3.240000	0.540000	11.200000	8
642	6.450000	0.375900	0.152400	2.018157	0.080826	19.442689	37.270000	0.997000	3.440000	0.430000	10.910000	8
643	9.370000	0.415300	0.263800	3.430787	0.056311	16.719396	24.740000	0.997900	3.380000	0.540000	12.410000	10
644	7.170000	0.504600	0.257100	3.189847	0.020794	11.443419	56.470000	0.995900	3.280000	0.590000	10.840000	8
645	6.320000	0.391200	0.321900	4.081266	0.093043	9.535009	33.520000	0.994500	3.210000	0.580000	9.130000	7
646	6.340000	0.584300	0.264800	3.250367	0.088286	9.299273	61.220000	0.993700	3.120000	0.650000	12.080000	8
647	6.030000	0.480900	0.244000	0.790532	0.062411	16.019246	20.970000	0.995400	3.190000	0.590000	11.700000	8
648	6.670000	0.703300	0.244000	2.439175	0.050285	27.006307	61.970000	0.995600	3.210000	0.470000	13.420000	9
649	8.510000	0.457000	0.306100	3.788574	0.065085	17.375161	37.640000	0.997600	3.310000	0.580000	12.100000	9
650	8.270000	0.462400	0.303600	4.209792	0.069679	22.509908	35.600000	0.993400	3.170000	0.610000	10.330000	8
651	5.790000	0.600400	0.259300	1.668666	0.089200	14.251147	38.090000	0.999700	3.200000	0.700000	11.760000	8
652	7.460000	0.454500	0.250100	2.283976	0.085557	12.107841	48.020000	1.001700	3.310000	0.600000	9.150000	7
653	6.720000	0.671200	0.154900	3.155169	0.071781	18.989824	30.700000	0.996400	3.370000	0.530000	10.200000	8
654	8.140000	0.568300	0.167900	2.091090	0.045128	12.536302	48.030000	0.996400	3.090000	0.600000	11.780000	9
655	7.010000	0.489600	0.228200	2.242730	0.055348	13.546102	33.020000	0.996500	3.220000	0.470000	10.160000	8
656	7.650000	0.503900	0.262800	3.410169	0.111912	15.486568	33.120000	0.997200	3.210000	0.600000	10.150000	8
657	7.010000	0.805100	0.230500	3.514131	0.071109	9.628179	37.030000	0.994300	3.300000	0.600000	9.680000	8
658	4.580000	0.568900	0.194300	3.642119	0.104810	16.277239	46.830000	0.996300	3.430000	0.690000	9.710000	7
659	7.260000	0.535000	0.268200	3.004779	0.098145	14.305796	30.420000	0.995700	3.290000	0.780000	11.650000	9
660	5.670000	0.506700	0.268900	1.490663	0.046894	8.484673	58.920000	0.995200	3.180000	0.640000	9.110000	7
661	8.100000	0.623700	0.335500	2.362829	0.095489	15.219500	34.150000	0.998000	3.290000	0.610000	8.870000	7
662	6.380000	0.368200	0.252100	1.514715	0.059123	18.569611	61.780000	0.994400	3.230000	0.610000	9.050000	7
663	6.470000	0.501900	0.258300	1.991966	0.061288	10.958901	30.620000	0.997900	3.450000	0.610000	12.580000	8
664	7.190000	0.236600	0.234100	3.075225	0.095914	26.562534	63.390000	0.996800	3.270000	0.540000	9.850000	7
665	7.890000	0.466700	0.400200	2.665885	0.069237	8.659286	50.440000	0.998100	3.330000	0.650000	11.060000	8
666	7.000000	0.604800	0.302200	4.710038	0.049080	10.646691	56.500000	0.995800	3.170000	0.590000	11.890000	9
667	9.170000	0.658200	0.228600	2.763574	0.056821	17.930341	26.320000	0.995200	3.140000	0.560000	9.950000	8
668	9.180000	0.580600	0.171500	2.909072	0.071926	15.308228	31.070000	0.995900	3.110000	0.660000	12.720000	10
669	9.260000	0.584000	0.205600	2.472415	0.093349	10.175488	30.190000	0.998000	3.290000	0.520000	9.640000	8
670	6.920000	0.348400	0.224000	3.271282	0.050183	18.553606	39.450000	0.998900	3.190000	0.660000	11.110000	8
671	5.420000	0.452200	0.201900	4.166319	0.080690	9.190047	47.060000	0.997700	3.480000	0.490000	12.240000	9

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
672	8.660000	0.667400	0.264100	2.669705	0.112746	18.782634	50.070000	0.991800	3.250000	0.500000	13.850000	10
673	6.700000	0.467600	0.219200	4.024133	0.053482	21.132148	44.960000	0.998200	3.340000	0.510000	11.600000	9
674	7.250000	0.506400	0.189700	2.401769	0.069409	18.255147	46.160000	0.996100	3.250000	0.500000	11.330000	8
675	7.950000	0.439400	0.301900	3.576793	0.070337	15.965573	54.320000	0.996100	3.350000	0.630000	9.570000	8
676	5.270000	0.426600	0.192900	2.421324	0.060866	11.723052	40.040000	0.991200	3.280000	0.700000	11.900000	8
677	9.150000	0.473000	0.142300	2.396894	0.096245	10.310730	35.690000	0.994600	3.180000	0.540000	10.350000	9
678	8.250000	0.453900	0.316900	0.477710	0.077763	18.771251	46.430000	0.997400	3.210000	0.660000	10.310000	8
679	7.620000	0.615800	0.359500	0.699111	0.078203	18.851158	45.060000	0.993800	3.290000	0.290000	9.150000	7
680	8.270000	0.541500	0.272000	2.378847	0.109493	12.109113	26.130000	0.990900	3.180000	0.430000	10.680000	8
681	7.870000	0.621900	0.304300	3.253489	0.085482	16.001978	41.670000	0.995800	3.250000	0.570000	10.900000	8
682	7.340000	0.381300	0.303600	2.457194	0.078527	25.245320	65.410000	0.993900	3.380000	0.580000	10.690000	8
683	6.830000	0.642500	0.387800	1.656201	0.078605	13.016767	40.610000	0.997000	3.260000	0.780000	7.820000	6
684	6.310000	0.522100	0.220500	1.540272	0.064326	17.154013	50.500000	0.997900	3.310000	0.640000	9.190000	7
685	7.540000	0.703900	0.247300	3.252814	0.104183	16.903046	38.070000	0.996300	3.280000	0.700000	11.170000	8
686	7.630000	0.514700	0.248000	1.477969	0.070907	18.372869	56.510000	0.995500	3.190000	0.650000	9.180000	7
687	8.500000	0.370700	0.272700	3.335412	0.080494	23.742542	46.240000	0.994800	3.160000	0.710000	11.490000	9
688	7.440000	0.648400	0.259600	3.196452	0.038998	21.260241	34.140000	0.996200	3.380000	0.620000	7.190000	6
689	6.180000	0.506400	0.265900	3.997749	0.092795	10.786850	49.920000	0.994500	3.400000	0.540000	12.810000	9
690	5.310000	0.304800	0.277100	4.961295	0.108416	16.119128	58.750000	0.996300	3.180000	0.600000	10.740000	8
691	7.050000	0.534500	0.368900	2.248868	0.104933	4.037143	46.260000	0.998100	3.390000	0.580000	12.160000	9
692	7.170000	0.543100	0.283700	2.385705	0.059124	13.212022	40.980000	0.995600	3.310000	0.570000	12.550000	9
693	7.080000	0.627600	0.311500	3.945497	0.091970	5.425156	47.120000	0.996400	3.350000	0.600000	11.460000	9
694	5.360000	0.161300	0.303400	2.454241	0.081033	8.189863	43.040000	0.997000	3.500000	0.710000	6.080000	5
695	8.490000	0.634900	0.287800	0.938134	0.067603	16.589370	48.930000	0.994900	3.090000	0.760000	11.630000	9
696	8.490000	0.472500	0.256700	1.732181	0.090490	26.015442	36.820000	0.996100	3.250000	0.740000	10.520000	8
697	6.210000	0.712600	0.310200	2.887223	0.093322	17.387407	30.440000	0.994600	3.330000	0.830000	10.730000	8
698	8.170000	0.348200	0.182500	1.287082	0.088963	23.837463	51.040000	0.994300	3.390000	0.620000	11.020000	8
699	8.340000	0.574500	0.347000	4.518714	0.089888	3.971303	62.440000	0.997300	3.190000	0.620000	7.940000	8
700	7.250000	0.561200	0.303400	3.800921	0.078131	9.107715	44.570000	0.993700	3.370000	0.660000	8.950000	7
701	6.060000	0.477800	0.275000	1.569348	0.113013	10.994919	40.490000	0.995900	3.320000	0.520000	6.030000	5
702	9.140000	0.442600	0.269400	1.648687	0.063100	11.347105	69.220000	0.995400	3.450000	0.460000	10.460000	8
703	7.660000	0.482600	0.281000	2.636584	0.087917	19.922086	51.340000	0.994400	3.240000	0.510000	13.040000	9
704	6.900000	0.485300	0.310700	2.075746	0.053158	9.720308	50.370000	0.996700	3.370000	0.430000	9.620000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
705	8.130000	0.394700	0.293100	2.397279	0.077952	10.306586	43.270000	0.993000	3.300000	0.620000	11.200000	9
706	9.150000	0.619300	0.338300	3.180642	0.085088	11.494081	35.010000	0.993800	3.210000	0.550000	11.850000	9
707	6.600000	0.410800	0.355700	2.304583	0.083479	3.769986	36.360000	0.994200	3.230000	0.660000	8.460000	7
708	8.030000	0.622300	0.324700	3.927282	0.093668	12.765414	38.050000	0.993500	3.230000	0.720000	10.900000	9
709	9.530000	0.341100	0.195400	3.366844	0.064067	16.999021	26.030000	0.994800	3.290000	0.500000	11.700000	9
710	5.860000	0.502300	0.243900	3.522122	0.063724	13.688588	37.800000	0.996100	3.320000	0.640000	10.520000	8
711	6.540000	0.503800	0.318900	1.346491	0.054602	15.087597	41.510000	0.995900	3.240000	0.590000	9.580000	7
712	6.480000	0.518400	0.376500	1.067399	0.063343	15.904984	37.200000	0.996300	3.390000	0.570000	11.290000	8
713	7.010000	0.615600	0.240700	2.481455	0.066260	12.417633	43.130000	0.995300	3.270000	0.520000	9.050000	7
714	6.950000	0.499800	0.300000	4.290856	0.062968	12.838656	39.230000	0.996000	3.420000	0.660000	12.740000	9
715	7.560000	0.474200	0.331400	3.715761	0.052483	13.793039	41.630000	0.998600	3.320000	0.570000	10.380000	8
716	6.220000	0.500100	0.275300	3.244838	0.086475	15.533399	33.790000	0.992200	3.310000	0.640000	13.470000	9
717	6.450000	0.618100	0.209100	3.746530	0.074434	12.348200	36.830000	0.996500	3.260000	0.610000	11.790000	9
718	7.560000	0.399400	0.367800	1.391358	0.082985	8.906394	39.960000	0.995500	3.390000	0.570000	9.280000	7
719	7.390000	0.417900	0.226600	1.059427	0.072058	16.627930	32.600000	0.995200	3.110000	0.760000	11.610000	8
720	8.250000	0.324300	0.233000	3.800336	0.123117	6.884858	39.080000	0.994300	3.350000	0.680000	9.860000	8
721	7.690000	0.722700	0.283400	1.892577	0.040440	11.417795	33.830000	0.992000	3.370000	0.440000	9.470000	7
722	8.130000	0.404000	0.272800	1.698449	0.068067	12.604748	50.860000	0.996000	3.390000	0.670000	9.940000	8
723	5.830000	0.331500	0.224100	3.108795	0.049580	10.182130	37.560000	0.993500	3.320000	0.480000	10.930000	8
724	6.740000	0.439100	0.353800	2.252385	0.094012	10.825935	45.120000	0.997400	3.600000	0.660000	7.840000	6
725	9.420000	0.458800	0.296000	2.378102	0.067305	17.783968	34.360000	0.994300	3.320000	0.660000	11.350000	9
726	7.670000	0.666500	0.315300	2.841716	0.085333	23.660753	37.880000	0.994700	3.100000	0.560000	9.450000	8
727	8.100000	0.473500	0.267800	2.674732	0.055163	7.104140	39.070000	0.995200	3.300000	0.610000	13.000000	9
728	7.530000	0.549200	0.269700	0.873318	0.080590	12.838010	27.470000	0.997100	3.320000	0.730000	13.110000	9
729	7.710000	0.340900	0.336100	2.031057	0.076903	15.398018	23.480000	0.997400	3.220000	0.610000	12.670000	9
730	6.920000	0.540800	0.244000	3.224457	0.069046	15.481802	26.450000	0.997300	3.460000	0.650000	12.340000	9
731	11.490000	0.355100	0.252200	1.813393	0.140758	6.690187	46.860000	0.994800	3.270000	0.760000	7.510000	8
732	6.720000	0.488600	0.293300	2.178067	0.085630	15.476538	45.150000	0.997300	3.200000	0.510000	13.870000	9
733	7.150000	0.444000	0.315200	2.209656	0.042424	15.003624	37.160000	0.993100	3.320000	0.500000	11.060000	8
734	4.290000	0.525800	0.315400	0.051774	0.123532	17.524267	22.840000	0.997200	3.320000	0.690000	13.190000	8
735	8.530000	0.583400	0.222900	2.601599	0.076550	9.143237	47.390000	0.996700	3.350000	0.500000	14.430000	10
736	6.540000	0.386400	0.215800	1.888975	0.057303	14.725983	34.080000	0.997000	3.040000	0.620000	10.980000	8
737	7.130000	0.406400	0.227600	3.085753	0.065638	10.613574	42.490000	0.994400	3.220000	0.660000	8.060000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
738	6.570000	0.539400	0.314200	2.759586	0.098799	16.406356	43.190000	0.995600	3.340000	0.680000	10.370000	8
739	7.030000	0.588700	0.314100	1.705230	0.101501	23.380804	52.170000	0.998500	3.420000	0.660000	11.790000	8
740	6.860000	0.661700	0.286000	2.967175	0.089542	19.034099	40.230000	0.992900	3.330000	0.440000	10.250000	8
741	7.150000	0.472800	0.284800	2.014520	0.065289	12.638364	3.150000	0.996400	3.220000	0.620000	9.250000	7
742	7.140000	0.370900	0.187400	1.812561	0.093786	16.286293	46.250000	0.995100	3.290000	0.480000	12.590000	9
743	7.010000	0.538700	0.286000	1.038608	0.085383	15.918397	31.410000	0.995700	3.400000	0.460000	10.770000	8
744	7.000000	0.440500	0.191300	2.938769	0.083526	8.406187	24.690000	0.996600	3.380000	0.690000	10.180000	8
745	8.770000	0.427600	0.311300	2.348548	0.081649	25.711230	30.510000	0.993800	3.370000	0.660000	10.610000	8
746	8.260000	0.660800	0.254200	1.984546	0.074999	17.914255	17.240000	0.997100	3.430000	0.770000	10.540000	8
747	8.260000	0.581900	0.282100	0.934246	0.083020	19.923817	47.340000	0.993800	3.450000	0.470000	11.930000	8
748	6.320000	0.447200	0.259300	3.599399	0.069487	11.033585	28.550000	0.995500	3.190000	0.560000	12.400000	9
749	8.710000	0.518100	0.266000	2.217587	0.093199	8.821929	47.880000	0.992700	3.230000	0.600000	11.980000	9
750	8.560000	0.511400	0.214300	2.840486	0.084729	12.408210	38.720000	0.996000	3.430000	0.430000	9.860000	8
751	6.540000	0.536500	0.261600	2.805451	0.118787	15.492226	38.250000	0.993300	3.150000	0.380000	12.160000	9
752	9.030000	0.479400	0.266800	1.127095	0.056124	14.125520	46.110000	0.996700	3.400000	0.520000	10.060000	8
753	6.380000	0.330000	0.280300	3.187462	0.104971	9.823703	11.550000	0.999900	3.150000	0.720000	11.240000	8
754	4.990000	0.422400	0.297200	2.245073	0.061948	18.739225	46.560000	0.995200	3.410000	0.550000	10.940000	7
755	8.520000	0.466800	0.294000	2.297462	0.068447	12.040119	41.870000	0.994100	3.310000	0.590000	9.040000	8
756	7.060000	0.522800	0.283500	0.559269	0.077987	22.077063	50.220000	0.995300	3.320000	0.560000	10.970000	8
757	8.370000	0.411800	0.237400	3.726722	0.111232	14.032160	35.640000	0.996500	3.340000	0.560000	10.950000	9
758	6.290000	0.538600	0.205000	2.602900	0.062491	13.208725	43.670000	0.993600	3.210000	0.530000	12.110000	9
759	5.690000	0.481900	0.219900	2.284169	0.100896	14.126086	31.990000	0.995600	3.430000	0.540000	13.450000	9
760	8.680000	0.444100	0.229100	1.805364	0.099866	14.477151	46.220000	0.999800	3.420000	0.460000	14.120000	10
761	5.510000	0.393000	0.312300	2.441574	0.104414	16.449901	47.720000	0.997200	3.100000	0.530000	10.220000	7
762	5.330000	0.564600	0.323800	3.138357	0.067678	9.218957	13.380000	0.994000	3.490000	0.830000	8.740000	7
763	4.890000	0.562400	0.230200	2.417958	0.096680	24.300817	43.300000	0.996300	3.210000	0.640000	11.110000	7
764	3.850000	0.600000	0.212000	2.971528	0.080535	18.845765	30.240000	0.995300	3.160000	0.690000	10.280000	7
765	5.950000	0.574900	0.188900	1.405984	0.089656	21.667569	37.910000	0.994800	3.180000	0.580000	10.300000	7
766	4.600000	0.582400	0.238800	0.667676	0.071594	8.932974	37.520000	0.994100	3.370000	0.550000	10.740000	7
767	7.160000	0.558200	0.290800	1.720481	0.041242	17.034221	42.060000	0.999700	2.970000	0.620000	10.550000	8
768	4.520000	0.344200	0.215600	2.140528	0.084022	19.722760	44.600000	0.991200	3.250000	0.490000	9.130000	6
769	5.890000	0.492100	0.329300	1.461355	0.095884	22.412591	37.310000	0.997800	3.240000	0.810000	9.650000	7
770	10.000000	0.376800	0.288300	2.427476	0.098506	6.274727	33.980000	0.995000	3.260000	0.530000	13.000000	10

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
771	7.610000	0.656900	0.323300	2.231246	0.087392	10.540613	33.500000	0.998800	3.150000	0.700000	10.220000	8
772	7.260000	0.518600	0.230200	0.614450	0.072903	13.259735	25.520000	0.993400	3.300000	0.510000	10.310000	8
773	5.260000	0.647000	0.305600	3.238930	0.065050	16.793730	21.230000	0.997100	3.310000	0.660000	13.730000	9
774	6.910000	0.417000	0.214500	2.273316	0.096456	9.339170	52.520000	0.998100	3.250000	0.630000	10.300000	8
775	7.260000	0.510800	0.304600	1.345891	0.098177	21.128683	25.700000	0.996200	3.410000	0.550000	10.560000	8
776	5.270000	0.546300	0.342000	0.980405	0.079222	9.965322	55.950000	0.996600	3.200000	0.690000	8.910000	6
777	7.350000	0.486900	0.341300	4.779148	0.085182	5.221557	28.970000	0.994300	3.280000	0.530000	12.950000	10
778	8.630000	0.538800	0.243400	2.008329	0.083752	15.768823	46.740000	0.994700	3.340000	0.410000	13.000000	9
779	6.780000	0.668200	0.225900	0.368860	0.070130	12.751898	51.810000	0.995200	3.140000	0.670000	8.660000	7
780	6.960000	0.416800	0.261700	1.042649	0.097717	15.304969	35.930000	0.996500	3.090000	0.580000	10.590000	7
781	4.750000	0.256200	0.348600	2.579862	0.109300	14.286470	39.160000	0.993200	3.320000	0.570000	10.980000	7
782	5.520000	0.680100	0.201900	1.760221	0.046667	21.975692	42.040000	0.992100	3.390000	0.610000	10.210000	7
783	8.470000	0.440800	0.194300	2.253080	0.090539	18.333062	41.670000	0.994200	3.480000	0.560000	12.120000	9
784	6.410000	0.632200	0.167700	2.455524	0.088327	14.493953	32.470000	0.997000	3.290000	0.530000	10.420000	8
785	6.080000	0.585200	0.274700	2.466111	0.076762	8.264830	24.220000	0.994600	3.300000	0.550000	11.110000	8
786	6.370000	0.498300	0.185000	2.460776	0.060434	12.728697	42.570000	0.994800	3.230000	0.600000	11.240000	8
787	7.130000	0.558000	0.329500	2.321915	0.114919	12.666833	43.960000	0.996700	3.330000	0.380000	10.750000	8
788	5.810000	0.405900	0.352000	4.114191	0.076457	7.368530	33.180000	0.996000	3.170000	0.630000	7.780000	7
789	7.350000	0.528600	0.263200	2.141635	0.114864	18.907038	52.010000	0.996400	3.360000	0.670000	9.520000	7
790	5.570000	0.579400	0.389700	3.606484	0.097655	8.060052	34.450000	0.996900	3.290000	0.540000	9.120000	7
791	8.130000	0.442600	0.281700	2.707169	0.081181	8.034599	47.680000	0.995200	3.220000	0.690000	10.900000	8
792	5.930000	0.482000	0.244800	3.454339	0.076571	11.260136	47.420000	0.993600	3.350000	0.670000	10.350000	8
793	8.780000	0.551300	0.243900	3.058892	0.083729	9.248708	23.500000	0.992900	3.370000	0.520000	10.140000	8
794	7.190000	0.652300	0.341600	3.638010	0.090606	13.000107	48.170000	0.992700	3.530000	0.780000	10.820000	8
795	6.190000	0.519700	0.309600	5.040514	0.083653	7.834054	16.150000	0.997300	3.320000	0.540000	10.510000	8
796	8.290000	0.476900	0.168500	2.417294	0.071875	13.149448	42.550000	0.992700	3.270000	0.620000	8.690000	7
797	5.550000	0.505400	0.176000	2.944621	0.101995	13.578242	32.190000	0.997400	3.330000	0.430000	8.740000	7
798	6.540000	0.636000	0.196500	4.396404	0.113281	16.869439	41.110000	0.994900	3.330000	0.560000	12.270000	9
799	7.200000	0.455800	0.240400	2.737581	0.079573	16.315148	51.910000	0.996800	3.300000	0.630000	10.730000	8
800	7.050000	0.490000	0.205100	0.143425	0.083155	13.879605	45.620000	0.997000	3.550000	0.630000	10.470000	7
801	4.790000	0.456800	0.231800	2.051009	0.095028	16.694199	45.710000	0.995700	3.430000	0.620000	11.730000	8
802	6.100000	0.499600	0.228900	2.141093	0.073225	13.642362	49.840000	0.996800	3.400000	0.940000	10.330000	8
803	7.400000	0.541400	0.214000	2.633194	0.038095	21.827655	35.200000	0.996600	3.320000	0.750000	10.730000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
804	5.620000	0.623400	0.376000	1.855758	0.083092	11.313131	45.380000	0.998100	3.320000	0.670000	11.050000	8
805	8.720000	0.307500	0.341000	4.817370	0.101558	12.165923	41.350000	0.993200	3.250000	0.640000	12.090000	10
806	7.790000	0.575500	0.359000	4.683720	0.054077	15.003683	35.230000	0.996300	3.140000	0.520000	12.600000	10
807	6.580000	0.430800	0.353900	0.871029	0.036785	11.184678	43.220000	0.995000	3.300000	0.600000	9.430000	7
808	6.940000	0.579300	0.266500	1.575169	0.091921	21.425877	32.400000	0.994800	3.300000	0.700000	12.360000	9
809	9.430000	0.644000	0.275500	3.558088	0.059902	18.126670	45.880000	0.994900	3.260000	0.620000	10.020000	8
810	8.320000	0.619600	0.223600	1.685665	0.051926	18.465306	26.470000	0.998500	3.410000	0.650000	11.600000	9
811	7.660000	0.535800	0.277400	2.088441	0.056371	17.641200	53.680000	0.993200	3.340000	0.670000	9.630000	7
812	5.500000	0.603400	0.220000	1.711787	0.086598	18.597194	36.370000	0.995700	3.320000	0.770000	8.710000	7
813	9.160000	0.425700	0.189900	3.908548	0.106118	11.470618	44.540000	0.994700	3.350000	0.520000	12.090000	9
814	8.460000	0.513200	0.231600	2.427957	0.052649	17.503092	35.620000	0.997700	3.180000	0.630000	13.340000	10
815	7.020000	0.671900	0.313600	3.755251	0.084211	9.615158	32.370000	0.994000	3.270000	0.690000	10.150000	8
816	6.540000	0.441100	0.274800	1.921504	0.085916	10.288285	39.060000	0.995400	3.200000	0.470000	12.430000	9
817	6.970000	0.539700	0.300100	3.297490	0.084197	16.885546	55.540000	0.997900	3.400000	0.490000	9.830000	8
818	5.760000	0.483100	0.270900	2.236313	0.092609	14.760594	40.300000	0.997900	3.240000	0.540000	11.090000	8
819	6.640000	0.500500	0.224100	2.692494	0.079509	16.266827	31.630000	0.995700	3.170000	0.500000	10.640000	8
820	8.120000	0.560600	0.296000	2.071143	0.051389	12.134839	22.270000	0.996000	3.330000	0.680000	10.370000	8
821	5.030000	0.493000	0.274700	2.240341	0.084733	11.284579	40.640000	0.997200	3.420000	0.690000	10.350000	7
822	6.820000	0.519700	0.335800	2.408717	0.100882	13.210217	41.160000	0.995800	3.170000	0.560000	8.960000	7
823	7.340000	0.469500	0.337700	2.750198	0.074788	15.301361	31.640000	0.994400	3.410000	0.560000	12.420000	9
824	7.320000	0.337500	0.255200	3.283551	0.063465	13.303150	45.780000	0.993100	3.280000	0.700000	9.550000	8
825	5.790000	0.539300	0.276100	1.547646	0.096140	19.144086	42.010000	0.996400	3.230000	0.780000	12.500000	8
826	5.780000	0.563900	0.225200	1.178345	0.069304	13.402746	40.690000	0.993700	3.450000	0.790000	9.660000	7
827	8.510000	0.658200	0.227000	3.761131	0.074881	6.998482	43.190000	0.996500	3.420000	0.670000	9.770000	8
828	5.730000	0.506800	0.241200	4.540317	0.096677	17.148038	27.930000	0.993900	3.180000	0.740000	11.620000	8
829	8.410000	0.380500	0.294600	3.461840	0.091490	20.816347	42.390000	0.996400	3.420000	0.690000	12.180000	9
830	6.620000	0.444600	0.244000	3.808688	0.127438	17.295205	39.680000	0.994800	3.330000	0.660000	12.680000	9
831	8.500000	0.574000	0.347300	2.128261	0.072130	19.258178	51.140000	0.994500	3.330000	0.690000	8.420000	7
832	6.690000	0.511500	0.293700	3.115975	0.102728	10.791040	34.190000	1.000100	3.220000	0.770000	9.470000	7
833	5.800000	0.547900	0.256600	2.933867	0.062624	16.662602	46.530000	0.995400	3.260000	0.750000	12.990000	9
834	8.230000	0.484700	0.320800	2.674849	0.122374	17.901044	39.870000	0.998600	3.460000	0.750000	9.070000	8
835	7.180000	0.707000	0.233300	1.650494	0.109137	14.749619	49.570000	0.992400	3.240000	0.690000	10.840000	8
836	8.940000	0.692800	0.237800	0.880504	0.095420	8.768102	64.800000	0.994500	3.440000	0.410000	9.680000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
837	8.270000	0.426800	0.337400	3.743433	0.053237	15.554340	43.080000	0.998400	3.580000	0.560000	9.610000	8
838	6.920000	0.610900	0.204700	3.281319	0.090862	21.853054	34.320000	0.994900	3.230000	0.510000	6.760000	6
839	6.660000	0.550400	0.262500	1.841241	0.066234	12.525118	41.770000	0.997300	3.360000	0.460000	11.740000	8
840	7.230000	0.521400	0.251000	2.853186	0.094753	25.685934	45.000000	0.992600	3.410000	0.600000	8.300000	7
841	7.430000	0.434000	0.233300	2.043696	0.083452	14.096509	34.810000	0.995800	3.320000	0.570000	10.610000	8
842	6.140000	0.682200	0.319300	3.430412	0.076615	16.839648	37.540000	0.994900	3.140000	0.490000	8.830000	7
843	8.210000	0.636500	0.313100	3.030260	0.119186	9.930434	36.440000	0.997000	3.310000	0.690000	11.290000	9
844	6.720000	0.374300	0.303900	4.050209	0.063466	4.161788	54.770000	0.994000	3.370000	0.540000	10.670000	8
845	6.690000	0.658300	0.271200	2.630257	0.069786	19.549324	40.610000	0.994100	3.390000	0.610000	7.670000	6
846	6.550000	0.516200	0.302100	2.418566	0.094836	18.035112	44.690000	0.997000	3.200000	0.800000	9.060000	7
847	7.480000	0.460200	0.169900	2.542533	0.068523	0.621628	29.480000	0.995900	3.340000	0.550000	8.840000	7
848	6.370000	0.422300	0.249800	5.299524	0.069256	13.859464	27.230000	0.998200	3.340000	0.450000	10.780000	8
849	7.360000	0.614500	0.271900	3.189505	0.098812	12.945394	27.360000	0.993600	3.460000	0.740000	8.460000	7
850	10.520000	0.560000	0.240500	2.612460	0.098521	19.434018	42.240000	0.997000	3.410000	0.500000	10.530000	9
851	7.140000	0.432600	0.279300	3.405343	0.119203	18.506277	32.000000	0.995400	3.340000	0.630000	11.240000	9
852	6.680000	0.438900	0.389100	2.266644	0.092654	10.175690	31.260000	0.992800	3.450000	0.470000	10.250000	8
853	5.200000	0.481200	0.275600	2.858255	0.101881	19.866437	45.900000	0.996000	3.370000	0.650000	11.720000	8
854	7.260000	0.468700	0.290600	3.517561	0.081037	14.809605	49.780000	0.994300	3.260000	0.450000	7.360000	6
855	5.870000	0.572800	0.280100	0.084744	0.075630	15.516868	33.390000	0.995300	3.350000	0.680000	9.000000	6
856	6.750000	0.557900	0.210100	1.179122	0.083882	17.284618	4.300000	0.992200	3.300000	0.470000	11.660000	8
857	7.380000	0.456400	0.195600	1.257045	0.069370	19.305136	26.310000	0.993300	3.360000	0.700000	12.680000	9
858	5.120000	0.354200	0.189000	2.162711	0.103324	6.204310	22.770000	0.997900	3.520000	0.490000	8.840000	6
859	7.390000	0.386600	0.284100	2.150979	0.064264	10.462135	55.730000	0.997200	3.250000	0.670000	13.460000	9
860	7.570000	0.607000	0.168000	2.956515	0.096132	8.151091	36.930000	0.994400	3.380000	0.580000	12.630000	9
861	5.640000	0.420500	0.302100	3.172100	0.121633	17.750735	28.860000	0.996900	3.460000	0.520000	11.960000	8
862	6.730000	0.531100	0.259900	3.974417	0.078706	26.258211	57.040000	0.993600	3.530000	0.660000	11.620000	9
863	5.000000	0.343700	0.292600	2.182708	0.105887	9.454027	26.570000	0.993600	3.410000	0.540000	9.930000	7
864	9.090000	0.559700	0.203700	2.107934	0.087737	10.840177	41.590000	0.995000	3.270000	0.610000	9.770000	8
865	7.600000	0.712000	0.347600	2.027330	0.082008	18.614695	31.650000	0.995400	3.210000	0.650000	13.090000	9
866	6.980000	0.387200	0.267000	1.606678	0.097124	20.811327	25.170000	0.993300	3.210000	0.410000	11.340000	8
867	7.000000	0.575000	0.175300	2.700704	0.093761	17.619966	29.920000	0.995300	3.060000	0.780000	11.910000	9
868	8.560000	0.547200	0.331700	1.281147	0.090505	16.573881	51.600000	0.997600	3.340000	0.720000	12.630000	9
869	7.090000	0.611800	0.206300	3.654889	0.080873	7.737452	38.010000	0.998000	3.280000	0.440000	9.930000	8

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
870	7.600000	0.506900	0.208900	2.767059	0.066636	13.348013	48.350000	0.994200	3.290000	0.620000	9.810000	8
871	9.020000	0.547300	0.210100	3.319483	0.113762	14.614720	33.870000	0.995100	3.260000	0.630000	10.310000	9
872	6.780000	0.538200	0.254500	4.121036	0.086166	23.702797	32.690000	0.993300	3.310000	0.720000	11.320000	8
873	5.890000	0.577300	0.299400	0.233061	0.097238	14.419007	35.800000	0.995500	3.260000	0.560000	9.930000	7
874	6.210000	0.436100	0.297900	2.366832	0.123037	14.448443	50.390000	0.991700	3.290000	0.720000	9.640000	7
875	8.910000	0.539200	0.396100	1.902316	0.100423	13.916348	33.930000	0.996900	3.280000	0.840000	12.200000	9
876	7.310000	0.601000	0.236800	2.963277	0.059565	9.645783	30.600000	0.996500	3.330000	0.580000	8.760000	7
877	6.600000	0.636800	0.247200	3.342539	0.058246	25.137338	26.210000	0.996100	3.460000	0.580000	9.510000	7
878	8.370000	0.569600	0.201800	2.931578	0.120703	10.833679	34.430000	0.997100	3.360000	0.590000	10.640000	9
879	8.400000	0.406800	0.215200	2.636707	0.047020	10.334014	25.600000	0.993400	3.320000	0.520000	13.950000	10
880	6.630000	0.364600	0.326000	2.332184	0.065847	16.652910	61.140000	0.997900	3.180000	0.440000	10.720000	8
881	6.030000	0.560900	0.244800	3.428201	0.093935	10.517433	42.670000	0.996900	3.280000	0.600000	9.080000	7
882	5.320000	0.418800	0.292600	2.529244	0.086369	17.067644	25.000000	0.995100	3.440000	0.710000	7.780000	6
883	5.050000	0.604400	0.271600	4.197865	0.050996	22.106480	45.480000	0.998200	3.290000	0.760000	7.910000	6
884	6.880000	0.491200	0.217500	1.992063	0.082524	9.005354	33.340000	0.996600	3.500000	0.710000	11.310000	8
885	6.130000	0.621200	0.228800	4.328316	0.120562	13.203573	40.260000	0.996200	3.410000	0.590000	9.750000	8
886	9.430000	0.732600	0.176200	1.318651	0.062652	12.499217	28.180000	0.995800	3.190000	0.520000	9.180000	8
887	7.270000	0.513800	0.259900	2.774008	0.049003	16.419533	37.840000	0.996600	3.280000	0.720000	9.880000	8
888	4.870000	0.508400	0.274000	2.580433	0.067147	18.922192	42.950000	0.997500	3.350000	0.680000	9.540000	7
889	8.900000	0.621300	0.254800	1.797848	0.082547	9.922113	37.010000	0.991700	3.400000	0.540000	7.990000	7
890	7.390000	0.626400	0.319700	1.146180	0.071958	15.206614	49.000000	0.993300	3.280000	0.640000	11.330000	8
891	8.050000	0.690200	0.203800	3.431332	0.100616	12.207220	50.300000	0.996000	3.250000	0.540000	10.810000	9
892	8.020000	0.539700	0.272300	2.500977	0.103496	16.611708	55.250000	0.995900	3.420000	0.530000	12.550000	9
893	7.560000	0.456700	0.219800	3.456049	0.107549	10.105304	26.200000	0.993900	3.380000	0.520000	11.510000	9
894	7.830000	0.520800	0.289000	4.285018	0.099213	14.351294	42.360000	0.996900	3.470000	0.640000	8.430000	8
895	7.490000	0.457600	0.225200	3.177156	0.075400	18.603452	55.580000	0.992200	3.250000	0.680000	8.970000	7
896	5.870000	0.544000	0.310600	3.463404	0.069330	14.745392	34.650000	0.997700	3.170000	0.560000	12.060000	9
897	7.640000	0.433200	0.301900	2.121476	0.081218	18.548919	51.780000	0.997500	3.410000	0.600000	11.000000	8
898	8.430000	0.610200	0.286600	3.929559	0.100827	14.088444	41.680000	0.994700	3.360000	0.560000	10.890000	9
899	6.950000	0.589700	0.282900	4.032273	0.062743	19.194551	31.120000	0.995700	3.280000	0.520000	7.510000	7
900	7.860000	0.533900	0.284300	3.071923	0.086569	9.512765	34.740000	0.994800	3.200000	0.530000	10.210000	8
901	7.700000	0.522600	0.286700	2.282767	0.100765	10.291205	42.300000	0.995300	3.210000	0.380000	12.020000	9
902	9.380000	0.500400	0.296600	2.554318	0.102941	23.354697	34.400000	0.997300	3.240000	0.510000	8.250000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
903	6.900000	0.651200	0.252300	2.655998	0.092765	15.338956	51.150000	0.997100	3.110000	0.720000	11.780000	8
904	6.850000	0.638700	0.214000	2.967810	0.058485	23.153927	46.990000	0.996000	3.410000	0.560000	10.870000	8
905	7.060000	0.534600	0.267800	2.494400	0.075429	21.916867	36.140000	0.992200	3.370000	0.770000	7.770000	7
906	7.080000	0.434300	0.295700	2.213615	0.078361	16.424650	26.550000	0.999400	3.250000	0.610000	10.740000	8
907	4.470000	0.402300	0.295600	2.333438	0.042390	9.625888	40.930000	0.996800	3.220000	0.570000	9.340000	6
908	6.430000	0.548800	0.356500	2.505906	0.062252	18.306443	58.660000	0.995300	3.300000	0.590000	9.680000	7
909	7.560000	0.456200	0.245000	3.728418	0.108536	11.726223	50.890000	0.999000	3.570000	0.500000	11.090000	8
910	7.190000	0.567600	0.199500	1.572206	0.071143	11.989268	50.080000	0.994000	3.340000	0.640000	8.900000	7
911	6.240000	0.481300	0.242800	0.565134	0.050374	10.356452	47.850000	0.994100	3.320000	0.360000	10.800000	7
912	6.400000	0.597400	0.248900	0.984294	0.089809	13.667859	57.700000	0.999200	3.210000	0.780000	9.950000	7
913	6.770000	0.540700	0.229800	2.727809	0.103714	14.122287	42.610000	0.996600	3.210000	0.590000	8.850000	7
914	6.240000	0.619800	0.218000	2.780911	0.044871	11.690848	59.260000	0.996100	3.460000	0.490000	8.580000	7
915	6.580000	0.296600	0.263200	3.674779	0.076429	7.619625	42.200000	0.996800	3.250000	0.620000	11.430000	8
916	6.550000	0.497300	0.266500	4.986085	0.062472	14.380975	37.040000	0.997100	3.340000	0.600000	10.380000	8
917	8.270000	0.741700	0.218100	2.339661	0.063838	8.221410	55.400000	0.995000	3.290000	0.610000	11.200000	9
918	8.420000	0.269700	0.212800	3.562697	0.060499	17.592904	40.850000	0.993200	3.270000	0.560000	12.710000	10
919	8.320000	0.604300	0.288500	1.922683	0.084845	11.275250	43.570000	0.998500	3.250000	0.640000	11.280000	9
920	7.710000	0.561800	0.293600	3.605921	0.078202	5.868719	42.970000	0.996500	3.370000	0.620000	12.000000	9
921	6.350000	0.648600	0.229100	2.787742	0.107804	8.719619	46.940000	0.997700	3.180000	0.570000	11.130000	8
922	8.350000	0.502600	0.261400	1.308224	0.059074	15.071925	40.960000	0.994200	3.400000	0.740000	8.550000	7
923	6.820000	0.639000	0.294800	2.829843	0.110146	16.889048	28.570000	0.996700	3.300000	0.500000	10.220000	8
924	7.230000	0.641700	0.276500	3.026070	0.080588	16.433716	47.370000	0.992100	3.150000	0.560000	7.950000	7
925	8.810000	0.539700	0.348100	2.890473	0.082177	8.952379	42.990000	0.994400	3.210000	0.960000	9.300000	8
926	7.300000	0.403600	0.202900	2.228363	0.063688	19.588178	36.830000	0.995700	3.260000	0.740000	12.020000	9
927	7.500000	0.611300	0.192200	3.978759	0.088529	20.315296	31.950000	0.995800	3.200000	0.550000	11.310000	8
928	5.500000	0.422700	0.306100	3.645357	0.107705	19.281701	46.900000	0.998600	3.180000	0.500000	10.530000	8
929	7.780000	0.506300	0.287500	3.194012	0.062311	19.006649	30.770000	0.993100	3.340000	0.580000	12.170000	9
930	6.020000	0.614700	0.242600	1.809217	0.102564	15.653707	34.110000	0.995800	3.470000	0.600000	11.900000	8
931	8.410000	0.629200	0.324400	2.112792	0.066243	18.162404	20.510000	0.996500	3.320000	0.680000	9.490000	8
932	6.980000	0.485200	0.237800	3.327540	0.070834	22.087907	37.030000	0.998000	3.230000	0.530000	11.560000	9
933	4.520000	0.582700	0.295600	4.211661	0.085261	15.792963	49.380000	0.992400	3.260000	0.530000	7.860000	6
934	6.770000	0.365700	0.261000	3.538038	0.079245	13.869544	40.100000	0.997100	3.280000	0.500000	9.800000	8
935	6.930000	0.472800	0.231200	2.324676	0.077956	11.476553	29.490000	0.997000	3.330000	0.480000	10.970000	8

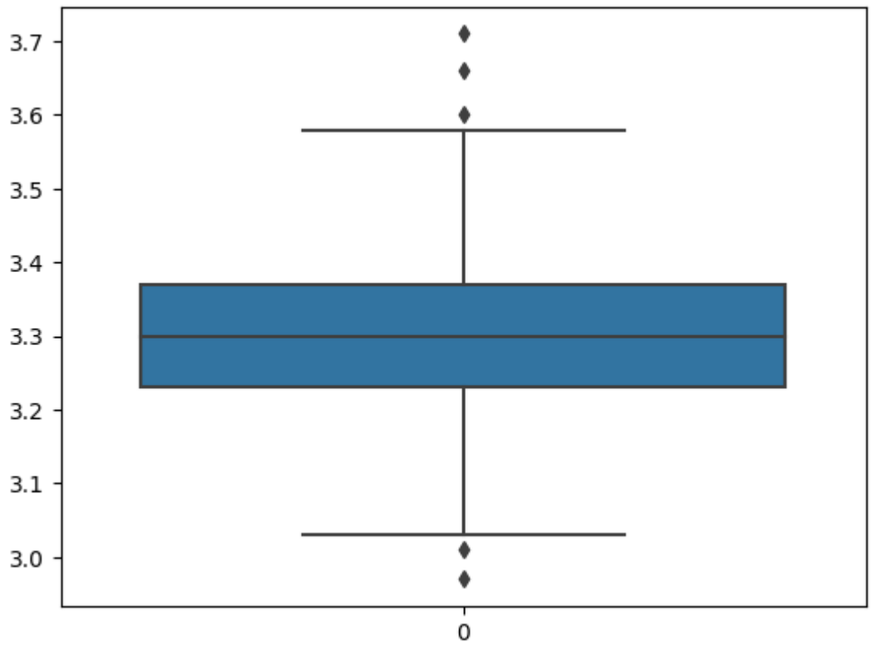
	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
936	7.780000	0.666900	0.248800	2.665562	0.079717	8.444001	56.660000	0.991500	3.500000	0.640000	9.940000	8
937	8.000000	0.654300	0.328600	3.743053	0.120542	23.743550	45.320000	0.998100	3.340000	0.450000	11.600000	9
938	6.810000	0.586900	0.250700	1.209345	0.083166	16.646036	32.630000	0.999300	3.420000	0.590000	11.120000	8
939	8.420000	0.505800	0.345400	1.103593	0.058209	23.591235	43.210000	0.994900	3.330000	0.440000	10.920000	8
940	3.400000	0.604700	0.277800	3.557770	0.055599	19.152721	37.430000	0.999400	3.320000	0.710000	11.940000	8
941	6.340000	0.517700	0.257300	2.644805	0.074152	18.506711	21.500000	0.996400	3.260000	0.370000	10.310000	8
942	5.870000	0.536800	0.219800	1.567353	0.117937	23.577884	45.210000	0.991800	3.260000	0.590000	12.790000	8
943	5.690000	0.528800	0.303800	2.318382	0.131425	15.269638	33.930000	0.995400	3.420000	0.560000	11.830000	8
944	8.350000	0.442400	0.280300	2.157444	0.099023	12.867690	57.080000	0.997300	3.390000	0.500000	12.500000	9
945	8.200000	0.592600	0.266100	3.011839	0.055541	9.492019	52.500000	0.996600	3.420000	0.740000	11.640000	9
946	6.270000	0.413000	0.275000	2.383029	0.061497	10.942841	30.110000	0.998300	3.320000	0.470000	7.730000	6
947	8.610000	0.597600	0.263900	2.943515	0.056260	9.061419	25.440000	0.995800	3.260000	0.610000	11.200000	9
948	7.320000	0.423900	0.210200	4.092020	0.061759	13.865532	35.900000	0.992500	3.430000	0.540000	10.890000	9
949	6.690000	0.447800	0.302700	2.700005	0.032111	7.379003	48.010000	0.998500	3.200000	0.760000	10.790000	8
950	6.370000	0.235900	0.362900	2.402116	0.091339	6.845316	46.610000	0.995300	3.230000	0.550000	9.830000	7
951	6.270000	0.504400	0.354900	1.995151	0.067638	5.282403	56.620000	1.000400	3.320000	0.640000	13.880000	9
952	7.770000	0.538900	0.275300	2.032225	0.117262	11.671822	41.460000	0.996200	3.320000	0.650000	12.740000	9
953	7.980000	0.602700	0.257300	2.399841	0.088244	13.783847	25.600000	0.997200	3.190000	0.730000	9.740000	8
954	7.490000	0.651100	0.274200	3.528331	0.094532	5.190389	36.620000	0.993700	3.280000	0.530000	8.230000	7
955	4.740000	0.371000	0.238900	3.295972	0.043902	12.115080	27.350000	0.991100	3.220000	0.590000	8.400000	6
956	7.560000	0.618500	0.284100	1.027764	0.069973	22.520927	50.330000	0.996300	3.580000	0.630000	12.190000	9
957	7.880000	0.473600	0.288700	4.380263	0.055661	21.633450	45.210000	0.996300	3.300000	0.520000	9.180000	8
958	6.400000	0.512800	0.209900	1.956285	0.047141	15.742084	34.120000	0.995600	3.450000	0.740000	11.480000	8
959	7.250000	0.509500	0.253600	1.959211	0.091610	12.536313	38.980000	0.996100	3.320000	0.570000	10.260000	8
960	4.960000	0.475000	0.313700	2.333528	0.081283	9.912025	53.630000	0.997000	3.360000	0.680000	11.450000	8
961	5.720000	0.431000	0.315000	4.562063	0.049045	14.242861	53.580000	0.996100	3.260000	0.560000	10.530000	8
962	6.810000	0.547900	0.207100	3.143195	0.106204	14.545048	37.980000	0.998800	3.390000	0.470000	9.970000	8
963	6.830000	0.601100	0.324800	2.733658	0.092337	19.442707	35.730000	0.996500	3.490000	0.590000	12.030000	9
964	7.620000	0.394000	0.255700	1.920219	0.067187	17.539618	49.940000	0.998600	3.380000	0.540000	11.710000	9
965	5.780000	0.518100	0.268700	2.682477	0.091128	15.547348	33.550000	0.998100	3.260000	0.610000	11.040000	8
966	6.790000	0.457100	0.261900	4.781683	0.083208	14.730120	31.070000	0.999200	3.230000	0.590000	11.330000	9
967	6.610000	0.629600	0.164300	3.374327	0.067759	10.573086	42.390000	0.996500	3.420000	0.670000	10.240000	8
968	7.830000	0.569400	0.291100	2.059140	0.065430	3.032139	38.740000	0.998800	3.200000	0.540000	9.090000	7

	fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
969	8.910000	0.670900	0.189600	2.158283	0.094141	18.252261	35.410000	0.996000	3.240000	0.680000	11.210000	9
970	9.270000	0.365100	0.311500	3.106928	0.086469	11.669736	57.130000	0.995300	3.380000	0.540000	10.920000	9
971	5.320000	0.623400	0.204900	3.464646	0.049960	19.539754	38.760000	0.993900	3.350000	0.610000	8.800000	7
972	7.140000	0.536300	0.323000	1.353004	0.095288	13.401784	37.550000	0.994200	3.170000	0.590000	11.310000	8
973	5.860000	0.447500	0.281600	2.891145	0.054808	14.083808	36.670000	0.992300	3.280000	0.560000	11.380000	8
974	7.120000	0.568900	0.300400	3.223282	0.069241	11.173994	41.320000	1.000000	3.310000	0.650000	9.630000	8
975	7.710000	0.676600	0.234100	3.761100	0.096857	21.323648	37.250000	0.997200	3.400000	0.670000	12.340000	9
976	7.300000	0.680500	0.179600	1.295616	0.076838	15.556836	40.320000	0.999500	3.300000	0.740000	10.860000	8
977	7.140000	0.602200	0.221000	4.807087	0.097896	9.113502	23.310000	0.995000	3.190000	0.460000	8.590000	7
978	8.980000	0.420800	0.286000	2.094590	0.118253	12.408760	28.420000	0.993400	3.500000	0.880000	10.730000	8
979	8.070000	0.551000	0.292800	2.061908	0.065521	7.381859	55.200000	0.996200	3.420000	0.680000	12.070000	9
980	6.870000	0.554200	0.227000	2.000103	0.092309	14.875501	50.570000	0.995400	3.230000	0.630000	10.980000	8
981	7.230000	0.644200	0.336300	3.087647	0.097487	8.049284	51.570000	0.998200	3.330000	0.670000	9.440000	8
982	8.250000	0.503500	0.269000	1.573458	0.105009	7.389244	38.750000	0.995600	3.420000	0.660000	10.480000	8
983	7.930000	0.521600	0.188000	4.236982	0.082689	25.136243	27.860000	0.995400	3.160000	0.750000	10.750000	9
984	6.690000	0.454600	0.283500	2.040450	0.062079	25.548322	49.650000	1.000700	3.350000	0.560000	9.090000	7
985	5.070000	0.586800	0.231400	2.625822	0.049331	14.815682	48.780000	0.992400	3.240000	0.430000	6.220000	5
986	5.780000	0.498500	0.311100	1.380053	0.094759	20.925225	31.850000	0.995400	3.220000	0.460000	14.220000	9
987	7.380000	0.538600	0.281200	1.978113	0.100404	12.319154	67.710000	0.997400	3.280000	0.590000	10.710000	8
988	5.060000	0.473000	0.277500	0.486570	0.099824	11.963872	45.870000	0.995000	3.280000	0.650000	11.050000	7
989	7.020000	0.524700	0.255600	2.471292	0.093246	17.789910	48.290000	0.995000	3.250000	0.550000	9.730000	8
990	6.660000	0.412000	0.326200	2.396858	0.059187	18.633629	28.230000	0.998600	3.140000	0.490000	10.510000	8
991	8.400000	0.536100	0.224600	0.738687	0.099077	14.465708	60.780000	1.000300	3.240000	0.470000	12.520000	9
992	5.620000	0.459700	0.286800	2.314833	0.041796	21.445849	41.540000	0.998000	3.270000	0.710000	11.230000	8
993	4.880000	0.589900	0.272100	3.004077	0.095569	22.288864	45.740000	0.994700	3.230000	0.790000	8.570000	6
994	6.700000	0.704700	0.218300	3.854567	0.058841	19.886092	39.040000	0.999500	3.270000	0.660000	13.430000	9
995	7.960000	0.604600	0.266200	1.592048	0.057555	14.892445	44.610000	0.997500	3.350000	0.540000	10.410000	8
996	8.480000	0.408000	0.222700	0.681955	0.051627	23.548965	25.830000	0.997200	3.410000	0.460000	9.910000	8
997	6.110000	0.484100	0.372000	2.377267	0.042806	21.624585	48.750000	0.992800	3.230000	0.550000	9.940000	7
998	7.760000	0.359000	0.320800	4.294486	0.098276	12.746186	44.530000	0.995200	3.300000	0.660000	9.760000	8
999	5.870000	0.521400	0.188300	2.179490	0.052923	16.203864	24.370000	0.998300	3.290000	0.700000	10.170000	7

4.a Nilai rata-rata pH diatas 3.29 ?

In [8]:
```
import scipy.stats as sts
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
sns.boxplot(data=df["pH"])
```

Out[8]: <Axes: >



In [9]:
```
import scipy.stats as sts
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)

print("Soal 4a")
mean = 3.29
alpha = 0.05
print("Menggunakan Scipy Stats Ttest_1samp")
print("Langkah 1: menentukan H0")
print("H0 : pH =", mean)
print("Langkah 2: menentukan H1")
print("H1: pH >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue, pValue = sts.ttest_1samp(df["pH"], mean, alternative = 'greater')
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
print("p-Value = ", float(pValue))
```

```
if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")

print("\nMenggunakan Cara Manual")
print("Langkah 1: menentukan H0")
print("H0 : pH =", mean)
print("Langkah 2: menentukan H1")
print("H1: pH >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue = (df["pH"].mean() - mean) / (df["pH"].std() / np.sqrt(len(df["pH"])))
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
pValue = sts.t.sf(np.abs(tValue), len(df["pH"]) - 1)
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

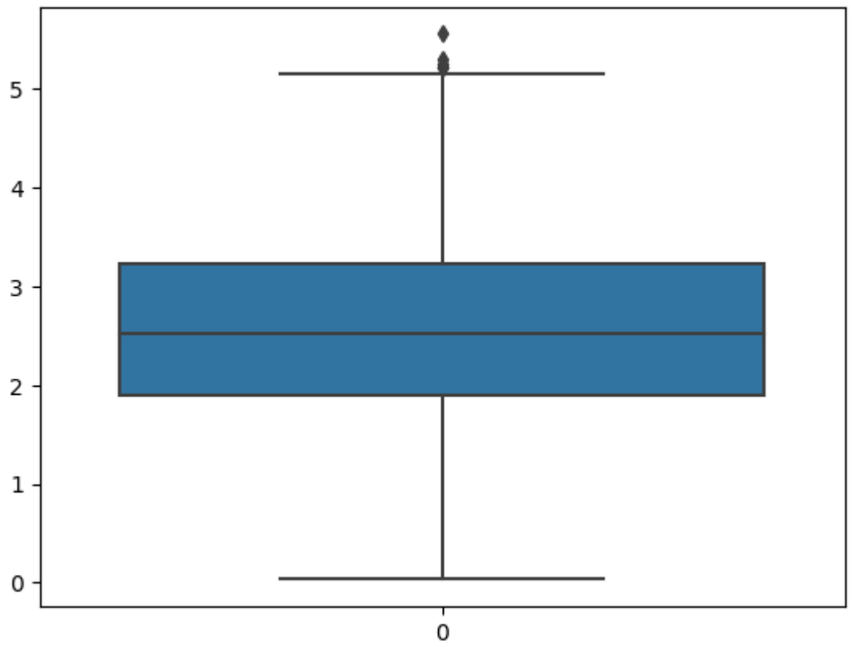
```
Soal 4a
Menggunakan Scipy Stats Ttest_1samp
Langkah 1: menentukan H0
H0 : pH = 3.29
Langkah 2: menentukan H1
H1: pH > 3.29
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  4.1037807933651145
p-Value =  2.197958306386009e-05
Kesimpulan: Menolak H0

Menggunakan Cara Manual
Langkah 1: menentukan H0
H0 : pH = 3.29
Langkah 2: menentukan H1
H1: pH > 3.29
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  4.1037807933651145
p-Value =  2.197958306386009e-05
Kesimpulan: Menolak H0
```

4.b Nilai rata-rata Residual Sugar tidak sama dengan 2.50?

In [7]:
```
import scipy.stats as sts
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
sns.boxplot(data=df["residual sugar"])
```

Out[7]: <Axes: >



In [14]:
```
import scipy.stats as sts
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)

print("Soal 4b")
mean = 2.50
alpha = 0.05
print("Menggunakan Scipy Stats Ttest_1samp")
print("Langkah 1: menentukan H0")
print("H0 : residual sugar =", mean)
print("Langkah 2: menentukan H1")
print("H1: residual sugar >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue, pValue = sts.ttest_1samp(df["residual sugar"], mean, alternative = 'two-sided')
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

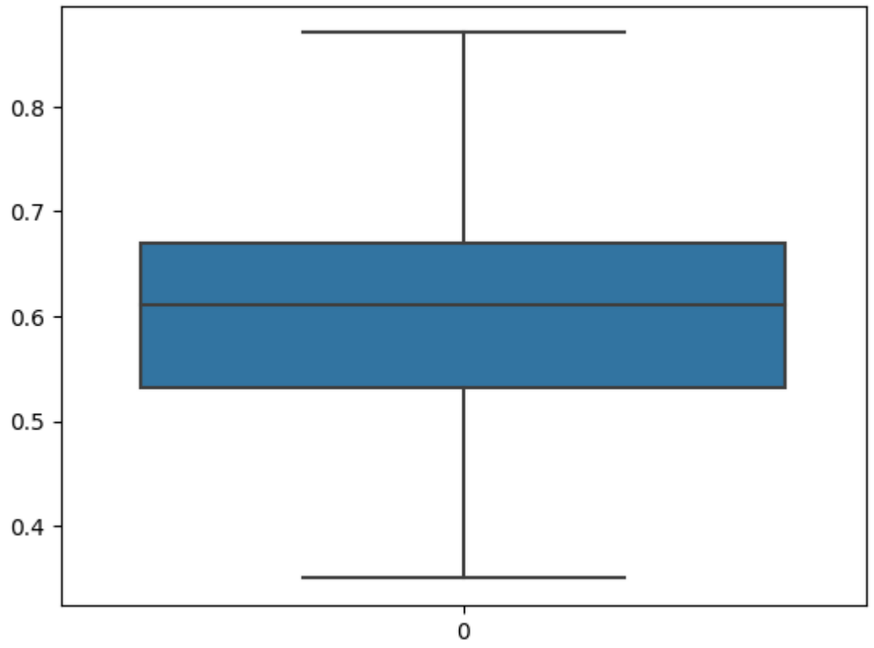
```
print("\nMenggunakan Cara Manual")
print("Langkah 1: menentukan H0")
print("H0 : residual sugar =", mean)
print("Langkah 2: menentukan H1")
print("H1: residual sugar >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue = (df["residual sugar"].mean() - mean) / (df["residual sugar"].std() / np.sqrt(len(df["residual sugar"])))
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
pValue = sts.t.sf(np.abs(tValue), len(df["residual sugar"])-1) * 2
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

```
Soal 4b
Menggunakan Scipy Stats Ttest_1samp
Langkah 1: menentukan H0
H0 : residual sugar = 2.5
Langkah 2: menentukan H1
H1: residual sugar > 2.5
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  2.1479619435539523
p-Value =  0.03195672670861676
Kesimpulan: Menolak H0

Menggunakan Cara Manual
Langkah 1: menentukan H0
H0 : residual sugar = 2.5
Langkah 2: menentukan H1
H1: residual sugar > 2.5
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  2.1479619435539523
p-Value =  0.03195672670861676
Kesimpulan: Menolak H0
```

4.c Nilai rata-rata 150 baris pertama kolom sulphates bukan 0.65?

In [4]:
```
import scipy.stats as sts
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
sns.boxplot(data=df["sulphates"].head(150))
```

Out[4]: <Axes: >



In [5]:
```
import scipy.stats as sts
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)

print("Soal 4c")
mean = 0.65
alpha = 0.05
print("Menggunakan Scipy Stats Ttest_1samp")
print("Langkah 1: menentukan H0")
print("H0 : sulphates =", mean)
print("Langkah 2: menentukan H1")
print("H1: sulphates >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue, pValue = sts.ttest_1samp(df["sulphates"].head(150), mean, alternative="two-sided")
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")


print("\nMenggunakan Cara Manual")
print("Langkah 1: menentukan H0")
print("H0 : sulphates =", mean)
```

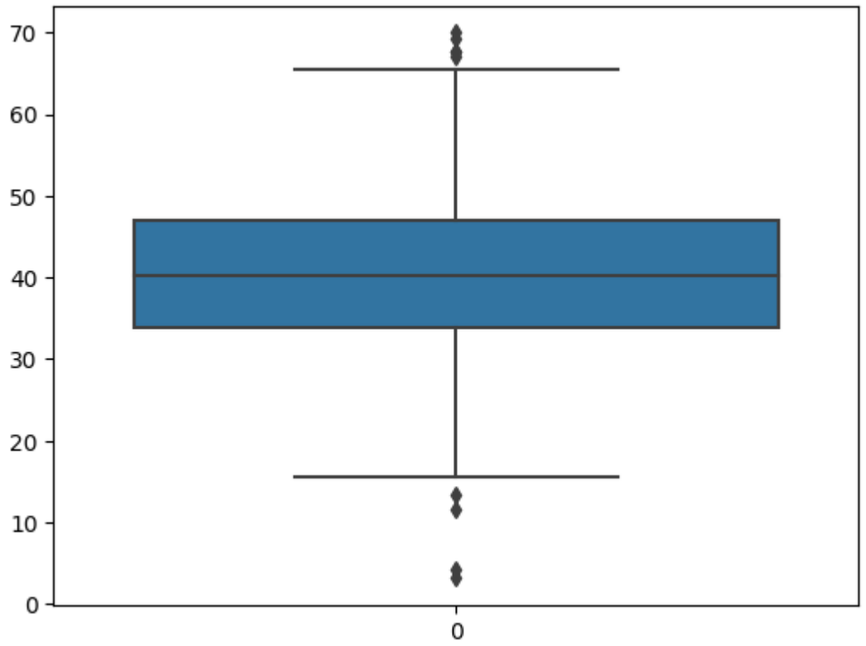
```
print("Langkah 2: menentukan H1")
print("H1: sulphates >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
t_value = (df["sulphates"].head(150).mean() - mean) / (df["sulphates"].head(150).std() / np.sqrt(150))
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
p_value = sts.t.sf(np.abs(tValue), 150 - 1) * 2
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

```
Soal 4c
Menggunakan Scipy Stats Ttest_1samp
Langkah 1: menentukan H0
H0 : sulphates = 0.65
Langkah 2: menentukan H1
H1: sulphates > 0.65
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  -4.964843393315917
p-Value =  1.8590151212371923e-06
Kesimpulan: Menolak H0
Menggunakan Cara Manual
Langkah 1: menentukan H0
H0 : sulphates = 0.65
Langkah 2: menentukan H1
H1: sulphates > 0.65
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  -4.964843393315917
p-Value =  1.8590151212371923e-06
Kesimpulan: Menolak H0
```

4.d Nilai rata-rata total sulfur dioxide di bawah 35?

In [7]:
```
import scipy.stats as sts
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
sns.boxplot(data=df["total sulfur dioxide"])
```

Out[7]:
```
<Axes: >
```



In [2]:
```
import scipy.stats as sts
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)

print("Soal 4d")
mean = 35
alpha = 0.05
print("Menggunakan Scipy Stats Ttest_1samp")
print("Langkah 1: menentukan H0")
print("H0 : total sulfur dioxide =", mean)
print("Langkah 2: menentukan H1")
print("H1 : total sulfur dioxide >", mean)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue, pValue = sts.ttest_1samp(df["total sulfur dioxide"], mean, alternative = 'less')
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")

print("\nMenggunakan Cara Manual")
print("Langkah 1: menentukan H0")
print("H0 : total sulfur dioxide =", mean)
print("Langkah 2: menentukan H1")
print("H1 : total sulfur dioxide >", mean)
```

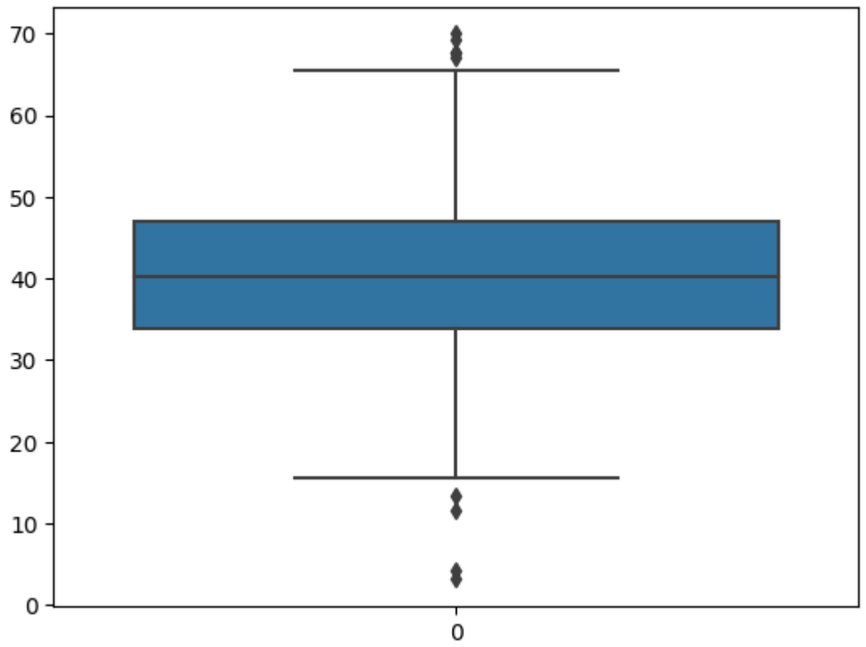
```
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai")
tValue = (df["total sulfur dioxide"].mean() - mean) / (df["total sulfur dioxide"].std() / np.sqrt(len(df["total sulfur dioxide"])))
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("t-Value = ", float(tValue))
pValue = 1 - sts.t.sf(np.abs(tValue), len(df["total sulfur dioxide"]) - 1)
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

```
Soal 4d
Menggunakan Scipy Stats Ttest_1samp
Langkah 1: menentukan H0
H0 : total sulfur dioxide = 35
Langkah 2: menentukan H1
H1 : total sulfur dioxide > 35
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  16.786387372296744
p-Value =  1.0
Kesimpulan: Tidak menolak H0

Menggunakan Cara Manual
Langkah 1: menentukan H0
H0 : total sulfur dioxide = 35
Langkah 2: menentukan H1
H1 : total sulfur dioxide > 35
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample T-Test karena membandingkan Rata-rata sebuah sample dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
t-Value =  16.786387372296744
p-Value =  1.0
Kesimpulan: Tidak menolak H0
```

4.e Proporsi nilai total sulfur dioxide yang lebih dari 40, adalah tidak sama dengan 50% ?

In [6]:
```
import scipy.stats as sts
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)
sns.boxplot(data=df["total sulfur dioxide"])
```

Out[6]:
```
<Axes: >
```



In [6]:
```
import scipy.stats as sts
import pandas as pd
import numpy as np
from statsmodels.stats.proportion import proportions_ztest

data = pd.read_csv('anggur.csv')
df = pd.DataFrame(data)

print("Soal 4e")
nullHypothesis = 0.5
totalSulfur = df["total sulfur dioxide"]
success = totalSulfur[totalSulfur > 40.0].count()
size = df["total sulfur dioxide"].count()
alpha = 0.05

print(size)
print("Menggunakan proportions_ztest")
print("Langkah 1: menentukan H0")
print("H0: Proporsi Total Sulfur Dioxide yang lebih dari 40 =", nullHypothesis)
print("Langkah 2 menentukan H1")
print("H1: Proporsi Total Sulfur Dioxide yang lebih dari 40 !=", nullHypothesis)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample Z-test karena membandingan proporsi sebuah variable dengan suatu nilai")
zValue, pValue = proportions_ztest(count = success, nobs = size, value = nullHypothesis, alternative = 'two-sided', prop_var = nullHypothesis)
print("Langkah 5: mencari nilai t-Value dan p-Value")
print("z-Value = ", float(zValue))
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

```
print("\nMenggunakan Cara Manual")
print("Langkah 1: menentukan H0")
print("H0: Proporsi Total Sulfur Dioxide yang lebih dari 40 =", nullHypothesis)
print("Langkah 2: menentukan H1")
print("H1: Proporsi Total Sulfur Dioxide yang lebih dari 40 !=", nullHypothesis)
print("Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05")
print("α =",alpha)
print("Langkah 4: 1-Sample Z-test karena membandingan proporsi sebuah variable dengan suatu nilai")
zValue = (success - size * nullHypothesis) / (np.sqrt(size * nullHypothesis * (1 - nullHypothesis)))
pValue = sts.norm.sf(abs(zValue)) * 2
print("z-Value = ", float(zValue))
print("p-Value = ", float(pValue))

if pValue < alpha:
    print("Kesimpulan: Menolak H0")
else :
    print("Kesimpulan: Tidak menolak H0")
```

```
Soal 4e
1000
Menggunakan proportions_ztest
Langkah 1: menentukan H0
H0: Proporsi Total Sulfur Dioxide yang lebih dari 40 = 0.5
Langkah 2 menentukan H1
H1: Proporsi Total Sulfur Dioxide yang lebih dari 40 != 0.5
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample Z-test karena membandingan proporsi sebuah variable dengan suatu nilai
Langkah 5: mencari nilai t-Value dan p-Value
z-Value =  0.7589466384404118
p-Value =  0.4478844782641115
Kesimpulan: Tidak menolak H0

Menggunakan Cara Manual
Langkah 1: menentukan H0
H0: Proporsi Total Sulfur Dioxide yang lebih dari 40 = 0.5
Langkah 2: menentukan H1
H1: Proporsi Total Sulfur Dioxide yang lebih dari 40 != 0.5
Langkah 3: menentukan tingkat signifikasi, disini kami menggunakan 0.05
α = 0.05
Langkah 4: 1-Sample Z-test karena membandingan proporsi sebuah variable dengan suatu nilai
z-Value =  0.7589466384404111
p-Value =  0.44788447826411193
Kesimpulan: Tidak menolak H0
```