

Brix Chart

Brix	Specific Gravity	Weight Per Gallon	Pound Solid	Refractive Index
0	1	8.322	0	0
0.1	1.00039	8.325	0.008	0
0.2	1.00078	8.328	0.017	0
0.3	1.00117	8.331	0.025	0
0.4	1.00156	8.335	0.033	0
0.5	1.00194	8.338	0.042	0
0.6	1.00233	8.341	0.05	0
0.7	1.00272	8.344	0.059	0
0.8	1.00312	8.348	0.067	0
0.9	1.00351	8.351	0.075	1.3343
1	1.0039	8.354	0.084	1.3344
1.1	1.00429	8.357	0.092	1.3346
1.2	1.00468	8.361	0.1	1.3347
1.3	1.00507	8.364	0.109	1.3349
1.4	1.00546	8.367	0.117	1.335
1.5	1.00585	8.37	0.126	1.3352
1.6	1.00624	8.374	0.134	1.3353
1.7	1.00663	8.377	0.142	1.3354
1.8	1.00702	8.38	0.151	1.3356
1.9	1.00741	8.383	0.159	1.3357
2	1.0078	8.387	0.168	1.3359
2.1	1.00819	8.39	0.176	1.336
2.2	1.00859	8.393	0.185	1.3362
2.3	1.00898	8.396	0.193	1.3363
2.4	1.00937	8.4	0.202	1.3365
2.5	1.00977	8.403	0.21	1.3366
2.6	1.01016	8.406	0.219	1.3368
2.7	1.01055	8.409	0.227	1.3369
2.8	1.01094	8.413	0.236	1.337
2.9	1.01134	8.416	0.244	1.3372
3	1.01173	8.419	0.252	1.3373
3.1	1.01213	8.423	0.261	1.3375
3.2	1.01252	8.426	0.27	1.3376
3.3	1.01292	8.429	0.278	1.3377

3.4	1.01331	8.432	0.287	1.3379
3.5	1.01371	8.436	0.295	1.338
3.6	1.0141	8.439	0.304	1.3382
3.7	1.0145	8.442	0.312	1.3383
3.8	1.0149	8.446	0.321	1.3385
3.9	1.01529	8.449	0.329	1.3386
4	1.01569	8.452	0.338	1.3388
4.1	1.01609	8.456	0.347	1.3389
4.2	1.01649	8.459	0.355	1.3391
4.3	1.01688	8.462	0.364	1.3392
4.4	1.01728	8.465	0.372	1.3394
4.5	1.01768	8.469	0.381	1.3395
4.6	1.01808	8.472	0.39	1.3397
4.7	1.01848	8.475	0.398	1.3398
4.8	1.01888	8.479	0.407	1.34
4.9	1.01928	8.482	0.416	1.3401
5	1.01968	8.485	0.424	1.3402
5.1	1.02008	8.489	0.433	1.3404
5.2	1.02048	8.492	0.441	1.3405
5.3	1.02088	8.495	0.45	1.3407
5.4	1.02128	8.499	0.459	1.3408
5.5	1.02168	8.502	0.468	1.341
5.6	1.02208	8.505	0.476	1.3411
5.7	1.02248	8.509	0.485	1.3413
5.8	1.02289	8.512	0.494	1.3414
5.9	1.02329	8.515	0.502	1.3416
6	1.02369	8.519	0.511	1.3417
6.1	1.02409	8.522	0.52	1.3419
6.2	1.0245	8.526	0.529	1.342
6.3	1.0249	8.529	0.537	1.3422
6.4	1.0253	8.532	0.546	1.3423
6.5	1.02571	8.536	0.555	1.3425
6.6	1.02611	8.539	0.564	1.3426
6.7	1.02652	8.542	0.572	1.3428
6.8	1.02692	8.546	0.581	1.3429
6.9	1.02733	8.549	0.59	1.3431
7	1.02773	8.552	0.599	1.3432
7.1	1.02814	8.556	0.607	1.3434
7.2	1.02854	8.559	0.616	1.3435
7.3	1.02895	8.563	0.625	1.3437

7.4	1.02936	8.566	0.634	1.3438
7.5	1.02976	8.569	0.643	1.344
7.6	1.03017	8.573	0.652	1.3441
7.7	1.03058	8.576	0.66	1.3443
7.8	1.03098	8.58	0.669	1.3444
7.9	1.03139	8.583	0.678	1.3446
8	1.0318	8.586	0.687	1.3447
8.1	1.03221	8.59	0.696	1.3449
8.2	1.03262	8.593	0.705	1.345
8.3	1.03303	8.597	0.714	1.3452
8.4	1.03344	8.6	0.722	1.3454
8.5	1.03385	8.603	0.731	1.3455
8.6	1.03426	8.607	0.74	1.3457
8.7	1.03467	8.61	0.749	1.3459
8.8	1.03508	8.614	0.758	1.346
8.9	1.03549	8.617	0.767	1.3461
9	1.0359	8.62	0.776	1.3463
9.1	1.03631	8.624	0.785	1.3464
9.2	1.03672	8.627	0.794	1.3466
9.3	1.03713	8.631	0.803	1.3467
9.4	1.03755	8.634	0.812	1.3469
9.5	1.03796	8.638	0.821	1.347
9.6	1.03837	8.641	0.83	1.3472
9.7	1.03879	8.644	0.838	1.3473
9.8	1.0392	8.648	0.848	1.3475
9.9	1.03961	8.651	0.956	1.3476
10	1.04003	8.655	0.866	1.3478
10.1	1.04044	8.658	0.874	1.348
10.2	1.04086	8.662	0.884	1.3481
10.3	1.04127	8.665	0.892	1.3483
10.4	1.04169	8.669	0.902	1.3484
10.5	1.0421	8.672	0.911	1.3486
10.6	1.04252	8.675	0.92	1.3487
10.7	1.04293	8.679	0.929	1.3489
10.8	1.04335	8.682	0.938	1.349
10.9	1.04377	8.686	0.947	1.3492
11	1.04418	8.689	0.956	1.3493
11.1	1.0446	8.693	0.965	1.3495
11.2	1.04502	8.696	0.974	1.3497
11.3	1.04544	8.7	0.983	1.3498

11.4	1.04585	8.703	0.992	1.35
11.5	1.04627	8.707	1.001	1.3501
11.6	1.04669	8.71	1.01	1.3503
11.7	1.04711	8.714	1.02	1.3504
11.8	1.04753	8.717	1.029	1.3506
11.9	1.04795	8.721	1.038	1.3507
12	1.04837	8.724	1.047	1.3509
12.1	1.04879	8.728	1.056	1.3511
12.2	1.04921	8.731	1.065	1.3512
12.3	1.04963	8.735	1.074	1.3514
12.4	1.05005	8.736	1.084	1.3515
12.5	1.05047	8.7422	1.093	1.3517
12.6	1.0509	8.745	1.102	1.3518
12.7	1.05132	8.749	1.111	1.352
12.8	1.05174	8.752	1.12	1.3522
12.9	1.05216	8.756	1.13	1.3523
13	1.05259	8.759	1.139	1.3525
13.1	1.05301	8.763	1.148	1.3626
13.2	1.05343	8.766	1.157	1.3528
13.3	1.05386	8.77	1.166	1.3529
13.4	1.05428	8.773	1.176	1.3531
13.5	1.0547	8.777	1.185	1.3533
13.6	1.05513	8.781	1.194	1.3534
13.7	1.05556	8.784	1.203	1.3536
13.8	1.05598	8.788	1.213	1.3537
13.9	1.05641	8.791	1.222	1.3539
14	1.05683	8.795	1.231	1.3541
14.1	1.05726	8.798	1.241	1.3542
14.2	1.05769	8.802	1.25	1.3544
14.3	1.05811	8.805	1.259	1.3545
14.4	1.05854	8.809	1.268	1.3447
14.5	1.05897	8.812	1.278	1.3548
14.6	1.0594	8.816	1.287	1.355
14.7	1.05982	8.82	1.297	1.3552
14.8	1.06025	8.823	1.306	1.3553
14.9	1.06068	8.827	1.315	1.3555
15	1.06111	8.83	1.325	1.3556
15.1	1.06154	8.834	1.334	1.3558
15.2	1.06197	8.837	1.343	1.356
15.3	1.0624	8.841	1.353	1.3561

15.4	1.06283	8.845	1.362	1.3563
15.5	1.06326	8.848	1.371	1.3564
15.6	1.06369	8.852	1.381	1.3566
15.7	1.06412	8.855	1.39	1.3567
15.8	1.06455	8.859	1.4	1.3569
15.9	1.06499	8.863	1.4091	1.3571
16	1.06542	8.866	1.419	1.3573
16.1	1.06585	8.87	1.428	1.3574
16.2	1.06629	8.873	1.437	1.3576
16.3	1.06672	8.877	1.447	1.3577
16.4	1.06715	8.881	1.456	1.3579
16.5	1.06759	8.884	1.466	1.3581
16.6	1.06802	8.888	1.475	1.3582
16.7	1.06845	8.891	1.485	1.3584
16.8	1.06889	8.895	1.494	1.3586
16.9	1.06933	8.899	1.504	1.3587
17	1.06976	8.902	1.513	1.3589
17.1	1.0702	8.906	1.523	1.3591
17.2	1.07063	8.909	1.532	1.3592
17.3	1.07107	8.913	1.542	1.3594
17.4	1.07151	8.917	1.552	1.3595
17.5	1.07194	8.92	1.561	1.3597
17.6	1.07238	8.924	1.571	1.3598
17.7	1.07282	8.928	1.58	1.36
17.8	1.07325	8.931	1.59	1.3602
17.9	1.07369	8.935	1.599	1.3603
18	1.07413	8.939	1.609	1.3605
18.1	1.07457	8.942	1.619	1.3607
18.2	1.07501	8.946	1.628	1.3608
18.3	1.07545	8.95	1.638	1.361
18.4	1.07589	8.953	1.647	1.3612
18.5	1.07633	8.957	1.657	1.3613
18.6	1.07677	8.961	1.667	1.3615
18.7	1.07721	8.964	1.676	1.3617
18.8	1.07765	8.968	1.686	1.3618
18.9	1.07809	8.972	1.696	1.362
19	1.07853	8.975	1.705	1.3621
19.1	1.07898	8.979	1.715	1.3623
19.2	1.07942	8.983	1.725	1.3625
19.3	1.07986	8.986	1.734	1.3626

19.4	1.0803	8.99	1.744	1.3628
19.5	1.08075	8.994	1.754	1.363
19.6	1.08119	8.997	1.763	1.3631
19.7	1.08164	9.001	1.773	1.3633
19.8	1.08208	9.005	1.783	1.3635
19.9	1.08252	9.008	1.792	1.3636
20	1.08297	9.012	1.802	1.3638
20.1	1.08342	9.016	1.812	1.364
20.2	1.08386	9.02	1.822	1.3641
20.3	1.08431	9.023	1.832	1.3643
20.4	1.9475	9.027	1.842	1.3645
20.5	1.0852	9.031	1.851	1.3646
20.6	1.08565	9.034	1.861	1.3648
20.7	1.08609	9.038	1.871	1.365
20.8	1.08654	9.042	1.881	1.3651
20.9	1.08699	9.046	1.891	1.3653
21	1.08744	9.049	1.9	1.3655
21.1	1.08789	9.053	1.91	1.3656
21.2	1.08834	9.057	1.92	1.3658
21.3	1.08879	9.061	1.93	1.366
21.4	1.08923	9.064	1.94	1.3661
21.5	1.08968	9.068	1.95	1.3663
21.6	1.09013	9.072	1.96	1.3665
21.7	1.09058	9.076	1.969	1.3667
21.8	1.09103	9.079	1.979	1.3668
21.9	1.09149	9.083	1.989	1.367
22	1.09194	9.087	1.999	1.3672
22.1	1.09239	9.091	2.009	1.3673
22.2	1.09284	9.094	2.019	1.3675
22.3	1.09329	9.098	2.029	1.3677
22.4	1.09375	9.102	2.039	1.3678
22.5	1.0942	9.106	2.049	1.368
22.6	1.09465	9.109	2.059	1.3682
22.7	1.09511	9.113	2.069	1.3683
22.8	1.09556	9.117	2.079	1.3685
22.9	1.09602	9.121	2.089	1.3687
23	1.09647	9.125	2.099	1.3688
23.1	1.09693	9.128	2.109	1.369
23.2	1.09738	9.132	2.119	1.3692
23.3	1.09784	9.136	2.129	1.3694

23.4	1.09829	9.14	2.139	1.3695
23.5	1.09875	9.143	2.149	1.3697
23.6	1.09921	9.147	2.159	1.3699
23.7	1.09966	9.151	2.169	1.37
23.8	1.10012	9.155	2.179	1.3702
23.9	1.10058	9.159	2.189	1.3704
24	1.10104	9.163	2.199	1.3706
24.1	1.10149	9.166	2.209	1.3707
24.2	1.10195	9.17	2.219	1.3709
24.3	1.10241	9.174	2.229	1.3711
24.4	1.10287	9.178	2.239	1.3712
24.5	1.10333	9.182	2.25	1.3714
24.6	1.1037	9.185	2.26	1.3716
24.7	1.10425	9.189	2.27	1.3718
24.8	1.10471	9.193	2.28	1.3719
24.9	1.10517	9.197	2.29	1.3721
25	1.10564	9.201	2.3	1.3723
25.1	1.1061	9.205	2.31	1.3724
25.2	1.10656	9.208	2.32	1.3726
25.3	1.10702	9.212	2.331	1.3728
25.4	1.10748	9.216	2.341	1.3729
25.5	1.10795	9.22	2.351	1.3731
25.6	1.10841	9.224	2.361	1.3733
25.7	1.10887	9.228	2.372	1.3735
25.8	1.10934	9.232	2.382	1.3736
25.9	1.1098	9.235	2.392	1.3738
26	1.11027	9.239	2.402	1.374
26.1	1.11073	9.243	2.412	1.3741
26.2	1.1112	9.247	2.423	1.3743
26.3	1.11166	9.251	2.433	1.3745
26.4	1.11213	9.255	2.443	1.3747
26.5	1.1126	9.259	2.454	1.3748
26.6	1.11306	9.263	2.464	1.375
26.7	1.11353	9.266	2.474	1.3752
26.8	1.114	9.27	2.484	1.3753
26.9	1.11447	9.274	2.495	1.3755
27	1.11493	9.278	2.505	1.3757
27.1	1.1154	9.282	2.515	1.3759
27.2	1.11587	9.286	2.526	1.3761
27.3	1.11634	9.29	2.536	1.3762

27.4	1.11681	9.294	2.547	1.3764
27.5	1.11728	9.298	2.557	1.3766
27.6	1.11775	9.302	2.567	1.3768
27.7	1.11822	9.305	2.578	1.3769
27.8	1.11869	9.309	2.588	1.3771
27.9	1.11916	9.313	2.598	1.3773
28	1.11963	9.317	2.609	1.3775
28.1	1.1201	9.321	2.619	1.3777
28.2	1.12058	9.325	2.63	1.3778
28.3	1.12105	9.329	2.64	1.378
28.4	1.12152	9.333	2.651	1.3782
28.5	1.12199	9.337	2.661	1.3784
28.6	1.12247	9.341	2.672	1.3785
28.7	1.12294	9.345	2.682	1.3787
28.8	1.12342	0.349	2.693	1.3789
28.9	1.12389	9.353	2.702	1.3791
29	1.12436	9.357	2.714	1.3792
29.1	1.12484	9.361	2.724	1.3794
29.2	1.12532	9.365	2.735	1.3796
29.3	1.12579	9.369	2.745	1.3798
29.4	1.12627	9.372	2.755	1.38
29.5	1.12674	9.376	2.766	1.3801
29.6	1.12722	9.38	2.776	1.3803
29.7	1.1277	9.384	2.787	1.3805
29.8	1.12817	9.388	2.798	1.3807
29.9	1.12865	9.392	2.808	1.3809
30	1.12913	9.396	2.819	1.381
30.1	1.12961	9.4	2.829	1.3812
30.2	1.13009	9.404	2.84	1.3814
30.3	1.13057	9.408	2.851	1.3816
30.4	1.13105	9.412	2.861	1.3818
30.5	1.13153	9.416	2.872	1.382
30.6	1.13201	9.42	2.883	1.3821
30.7	1.13249	9.424	2.893	1.3823
30.8	1.13297	9.428	2.904	1.3825
30.9	1.13345	9.432	2.914	1.3827
31	1.13394	9.436	2.925	1.3829
31.1	1.13442	9.44	2.936	1.383
31.2	1.1349	9.444	2.947	1.3832
31.3	1.13538	9.448	2.957	1.3834

31.4	1.13587	9.452	2.968	1.3836
31.5	1.13635	9.456	2.797	1.3838
31.6	1.13683	9.46	2.99	1.3839
31.7	1.13732	9.464	3	1.3841
31.8	1.1378	9.468	3.011	1.3843
31.9	1.13829	9.472	3.0221	1.3845
32	1.13877	9.477	3.033	1.3847
32.1	1.13926	9.481	3.043	1.3848
32.2	1.13974	9.485	3.054	1.385
32.3	1.14023	9.489	3.065	1.3852
32.4	1.14072	9.493	3.076	1.3854
32.5	1.1412	9.497	3.087	1.3856
32.6	1.14169	9.501	3.097	1.3858
32.7	1.14218	9.505	3.108	1.386
32.8	1.14267	9.509	3.119	1.3861
32.9	1.14316	9.513	3.13	1.3863
33	1.14364	9.517	3.141	1.3865
33.1	1.14413	9.521	3.151	1.3867
33.2	1.14462	9.525	3.162	1.3869
33.3	1.14511	9.529	3.173	1.3871
33.4	1.1456	9.533	3.184	1.3872
33.5	1.14609	9.537	3.195	1.3874
33.6	1.14658	9.541	3.206	1.3876
33.7	1.14708	9.546	3.217	1.3878
33.8	1.14757	9.55	3.228	1.3879
33.9	1.14806	9.554	3.239	1.3881
34	1.14855	9.558	3.25	1.3883
34.1	1.14904	9.562	3.261	1.3885
34.2	1.14954	9.566	3.272	1.3887
34.3	1.15003	9.57	3.283	1.3889
34.4	1.15052	9.574	3.293	1.3891
34.5	1.15102	9.578	3.303	1.3893
34.6	1.15151	9.583	3.316	1.3894
34.7	1.15201	9.587	3.327	1.3896
34.8	1.1525	9.591	3.338	1.3898
34.9	1.153	9.595	3.349	1.39
35	1.1535	9.599	3.36	1.13902
35.1	1.15399	9.603	3.371	1.3904
35.2	1.15449	9.607	3.382	1.3906
35.3	1.15498	9.611	3.393	1.3908

35.4	1.15548	9.616	3.404	1.3909
35.5	1.15598	9.62	3.415	1.13911
35.6	1.15648	9.624	3.426	1.3913
35.7	1.15698	9.628	3.437	1.3915
35.8	1.15747	9.632	3.448	1.3916
35.9	1.15797	9.636	3.459	1.3918
36	1.15847	9.64	3.47	1.1392
36.1	1.15897	9.645	3.482	1.3922
36.2	1.15947	9.649	3.493	1.3924
36.3	1.15997	9.653	3.504	1.3926
36.4	1.16047	9.657	3.515	1.3928
36.5	1.16098	9.661	3.526	1.393
36.6	1.16148	9.665	3.537	1.3931
36.7	1.16198	9.67	3.549	1.3933
36.8	1.16248	9.674	3.56	1.3935
36.9	1.16298	9.678	3.571	1.3937
37	1.16349	9.682	3.582	1.3939
37.1	1.16399	9.686	3.594	1.3941
37.2	1.16449	9.691	3.605	1.3943
37.3	1.165	9.695	3.616	1.3945
37.4	1.1655	9.699	3.627	1.3947
37.5	1.16601	9.703	3.639	1.3949
37.6	1.16652	9.707	3.65	1.395
37.7	1.16702	9.712	3.661	1.3952
37.8	1.16752	9.716	3.673	1.3954
37.9	1.16803	9.72	3.684	1.3956
38	1.16853	9.724	3.695	1.3958
38.1	1.16904	9.728	3.706	1.396
38.2	1.16955	9.733	3.718	1.3962
38.3	1.17006	9.737	3.729	1.3964
38.4	1.17056	9.741	3.741	1.3966
38.5	1.17107	9.745	3.752	1.3968
38.6	1.17158	9.749	3.763	1.397
38.7	1.17209	9.754	3.775	1.3972
38.8	1.1726	9.758	3.786	1.37974
38.9	1.17311	9.762	3.797	1.3976
39	1.17362	9.766	3.809	1.3978
39.1	1.17413	9.771	3.82	1.398
39.2	1.17464	9.775	3.832	1.3982
39.3	1.17515	9.779	3.843	1.3984

39.4	1.17566	9.783	3.855	1.3986
39.5	1.17618	9.788	3.866	1.3988
39.6	1.17669	9.792	3.878	1.3989
39.7	1.1772	9.796	3.889	1.3991
39.8	1.17772	9.801	3.901	1.3993
39.9	1.17823	9.805	3.912	1.3995
40	1.17874	9.809	3.924	1.3997
40.1	1.17926	9.813	3.935	1.3999
40.2	1.17977	9.818	3.947	1.4001
40.3	1.18029	9.822	3.958	1.4003
40.4	1.1808	9.826	3.97	1.4005
40.5	1.18132	9.831	3.982	1.4007
40.6	1.18183	9.835	3.993	1.4008
40.7	1.18235	9.839	4.004	1.401
40.8	1.18287	9.843	4.016	1.4012
40.9	1.18339	9.848	4.028	1.4014
41	1.1839	9.852	4.039	1.4016
41.1	1.18442	9.856	4.051	1.4018
41.2	1.18494	9.861	4.063	1.402
41.3	1.18546	9.865	4.074	1.4022
41.4	1.18598	9.869	4.086	1.4024
41.5	1.1865	9.874	4.098	1.4026
41.6	1.18702	9.878	4.109	1.4028
41.7	1.18754	9.882	4.121	1.403
41.8	1.18806	9.887	4.133	1.4032
41.9	1.18858	9.891	4.144	1.4034
42	1.1891	9.895	4.156	1.4036
42.1	1.18962	9.9	4.167	1.4038
42.2	1.19014	9.904	4.179	1.404
42.3	1.19062	9.908	4.191	1.4042
42.4	1.19119	9.913	4.203	1.4044
42.5	1.19171	9.917	4.215	1.4046
42.6	1.19224	9.921	4.226	1.4048
42.7	1.19276	9.926	4.238	1.405
42.8	1.19329	9.93	4.25	1.4052
42.9	1.19381	9.935	4.262	1.4054
43	1.19434	9.939	4.274	1.4056
43.1	1.19486	9.943	4.285	1.4058
43.2	1.19539	9.948	4.298	1.406
43.3	1.19591	9.952	4.309	1.4062

43.4	1.19644	9.956	4.321	1.4064
43.5	1.19697	9.961	4.333	1.4066
43.6	1.19749	9.965	4.345	1.4068
43.7	1.19802	9.97	4.357	1.407
43.8	1.19855	9.974	4.369	1.4072
43.9	1.19908	9.978	4.38	1.4074
44	1.19961	9.983	4.393	1.4076
44.1	1.20013	9.987	4.404	1.4078
44.2	1.20066	9.992	4.416	1.408
44.3	1.20119	9.996	4.428	1.4082
44.4	1.20172	10	4.44	1.4084
44.5	1.20226	10.005	4.452	1.4086
44.6	1.20279	10.009	4.464	1.4088
44.7	1.20332	10.014	4.476	1.409
44.8	1.20385	10.018	4.488	1.4092
44.9	1.20438	10.022	4.5	1.4094
45	1.20491	10.027	4.512	1.4096
45.1	1.20545	10.031	4.524	1.4098
45.2	1.20598	10.036	4.536	1.41
45.3	1.20651	10.04	4.548	1.4102
45.4	1.20705	10.045	4.56	1.4104
45.5	1.20758	10.049	4.572	1.4107
45.6	1.20812	10.054	4.585	1.4109
45.7	1.20865	10.058	4.597	1.4111
45.8	1.20919	10.063	4.609	1.4113
45.9	1.20972	10.067	4.621	1.4115
46	1.21026	10.071	4.633	1.4117
46.1	1.2108	10.076	4.645	1.4119
46.2	1.21133	10.08	4.657	1.4121
46.3	1.21187	10.085	4.669	1.4123
46.4	1.21241	10.089	4.681	1.4125
46.5	1.21295	10.094	4.694	1.4127
46.6	1.21349	10.098	4.706	1.4129
46.7	1.21402	10.103	4.718	1.4131
46.8	1.21456	10.107	4.73	1.4133
46.9	1.2151	10.112	4.743	1.4135
47	1.21564	10.116	4.755	1.4137
47.1	1.21618	10.121	4.767	1.4139
47.2	1.21673	10.125	4.779	1.4141
47.3	1.21727	10.13	4.791	1.4143

47.4	1.21781	10.134	4.804	1.4145
47.5	1.21835	10.139	4.816	1.4148
47.6	1.21889	10.143	4.828	1.415
47.7	1.21943	10.148	4.841	1.4152
47.8	1.21998	10.152	4.853	1.4154
47.9	1.22052	10.157	4.8651	1.4156
48	1.22106	10.162	4.877	1.4158
48.1	1.22161	10.166	4.89	1.416
48.2	1.22215	10.17	4.902	1.4162
48.3	1.2227	10.175	4.915	1.4164
48.4	1.22324	10.179	4.927	1.4166
48.5	1.22379	10.184	4.939	1.4169
48.6	1.22434	10.189	4.952	1.4171
48.7	1.22488	10.193	4.964	1.4173
48.8	1.22543	10.198	4.977	1.4175
48.9	1.22598	10.202	4.989	1.4177
49	1.22652	10.207	5.001	1.4179
49.1	1.22707	10.211	5.014	1.4181
49.2	1.22762	10.216	5.026	1.4183
49.3	1.22817	10.22	5.039	1.4185
49.4	1.22872	10.225	5.051	1.4187
49.5	1.22927	10.23	5.064	1.419
49.6	1.22982	10.234	5.076	1.4192
49.7	1.23037	10.239	5.089	1.4194
49.8	1.23092	10.243	5.101	1.4196
49.9	1.23147	10.248	5.114	1.4199
50	1.23202	10.252	5.126	1.4201
50.1	1.23257	10.257	5.139	1.4203
50.2	1.23313	10.262	5.152	1.4205
50.3	1.23368	10.266	5.164	1.4207
50.4	1.23423	10.271	5.177	1.4209
50.5	1.23478	10.275	5.189	1.4212
50.6	1.23534	10.28	5.202	1.4214
50.7	1.23589	10.285	5.214	1.4216
50.8	1.23645	10.289	5.227	1.4218
50.9	1.237	10.294	5.24	1.422
51	1.23756	10.299	5.252	1.4222
51.1	1.23811	10.303	5.265	1.4224
51.2	1.23867	10.308	5.278	1.4226
51.3	1.23922	10.312	5.29	1.4228

51.4	1.23978	10.317	5.303	1.423
51.5	1.24034	10.322	5.316	1.4233
51.6	1.24089	10.326	5.328	1.4235
51.7	1.24145	10.331	5.341	1.4237
51.8	1.24201	10.336	5.354	1.4239
51.9	1.24257	10.34	5.366	1.4241
52	1.24313	10.345	5.379	1.4243
52.1	1.24369	10.35	5.392	1.4245
52.2	1.24425	10.354	5.405	1.4248
52.3	1.24481	10.359	5.418	1.425
52.4	1.24537	10.364	5.431	1.4252
52.5	1.24593	10.368	5.443	1.4254
52.6	1.24649	10.373	5.456	1.4256
52.7	1.24705	10.378	5.469	1.4248
52.8	1.24761	10.382	5.482	1.426
52.9	1.24818	10.387	5.495	1.4262
53	1.24874	10.392	5.508	1.4265
53.1	1.2493	10.396	5.52	1.4267
53.2	1.24987	10.401	5.533	1.4269
53.3	1.25043	10.406	5.546	1.4271
53.4	1.25099	10.41	5.559	1.4273
53.5	1.25156	10.415	5.572	1.4275
53.6	1.25212	10.42	5.585	1.4278
53.7	1.25269	10.425	5.598	1.428
53.8	1.25325	10.429	5.611	1.4282
53.9	1.25382	10.434	5.624	1.4284
54	1.25439	10.439	5.637	1.4286
54.1	1.25495	10.443	5.65	1.4288
54.2	1.25552	10.448	5.663	1.4291
54.3	1.25609	10.453	5.676	1.4293
54.4	1.25666	10.458	5.689	1.4295
54.5	1.25723	10.462	5.702	1.4297
54.6	1.2578	10.467	5.715	1.4299
54.7	1.25836	10.472	5.728	1.4301
54.8	1.25893	10.476	5.741	1.4304
54.9	1.2595	10.481	5.754	1.4306
55	1.26007	10.486	5.767	1.4308
55.1	1.26064	10.491	5.781	1.431
55.2	1.26122	10.495	5.793	1.4312
55.3	1.26179	10.5	5.807	1.4315

55.4	1.26236	10.505	5.82	1.4317
55.5	1.26293	10.51	5.833	1.4319
55.6	1.2635	10.515	5.846	1.4321
55.7	1.26408	10.519	5.859	1.4323
55.8	1.26465	10.524	5.872	1.4326
55.9	1.26522	10.529	5.886	1.4328
56	1.2658	10.534	5.899	1.433
56.1	1.26637	10.538	5.912	1.4332
56.2	1.26695	10.543	5.925	1.4334
56.3	1.26772	10.548	5.939	1.4337
56.4	1.2681	10.553	5.952	1.4339
56.5	1.26868	10.558	5.965	1.4341
56.6	1.26925	10.562	5.978	1.4313
56.7	1.26983	10.657	5.991	1.4345
56.8	1.27041	10.572	6.005	1.4348
56.9	1.27098	10.577	6.018	1.435
57	1.27156	10.581	6.031	1.4352
57.1	1.27214	10.586	6.045	1.4354
57.2	1.27272	10.591	6.058	1.4356
57.3	1.2733	10.596	6.072	1.4359
57.4	1.27388	10.601	6.085	1.4361
57.5	1.27446	10.606	6.098	1.4363
57.6	1.27504	10.61	6.111	1.4365
57.7	1.27562	10.615	6.125	1.4368
57.8	1.2762	10.62	6.138	1.437
57.9	1.27678	10.625	6.152	1.4372
58	1.27736	10.63	6.165	1.4374
58.1	1.27794	10.635	6.179	1.4376
58.2	1.27853	10.64	6.192	1.4379
58.3	1.27911	10.644	6.205	1.4381
58.4	1.27969	10.649	6.219	1.4383
58.5	1.28028	10.654	6.233	1.4385
58.6	1.28086	10.659	6.246	1.4388
58.7	1.28145	10.664	6.26	1.439
58.8	1.28203	10.669	6.273	1.4392
58.9	1.28262	10.674	6.287	1.4394
59	1.2832	10.678	6.3	1.4397
59.1	1.28379	10.683	6.314	1.4399
59.2	1.28437	10.688	6.327	1.4401
59.3	1.28497	10.693	6.341	1.4403

59.4	1.28555	10.698	6.355	1.4406
59.5	1.28614	10.703	6.368	1.4408
59.6	1.28672	10.708	6.382	1.441
59.7	1.28731	10.713	6.396	1.4412
59.8	1.28789	10.718	6.409	1.4415
59.9	1.28849	10.722	6.422	1.4417
60	1.28908	10.727	6.436	1.4419
60.1	1.28966	10.732	6.45	1.4422
60.2	1.29025	10.737	6.464	1.4424
60.3	1.29084	10.742	6.477	1.4426
60.4	1.29143	10.747	6.491	1.4428
60.5	1.29023	10.752	6.505	1.4431
60.6	1.29262	10.757	6.519	1.4433
60.7	1.29321	10.762	6.533	1.4435
60.8	1.2938	10.767	6.546	1.4437
60.9	1.29439	10.772	6.56	1.444
61	1.29498	10.777	6.574	1.4442
61.1	1.29559	10.781	6.587	1.4444
61.2	1.29618	10.786	6.601	1.4447
61.3	1.29677	10.791	6.615	1.4449
61.4	1.29736	10.796	6.629	1.4451
61.5	1.29796	10.801	6.643	1.4453
61.6	1.29855	10.806	6.656	1.4456
61.7	1.29915	10.811	6.67	1.4458
61.8	1.29975	10.816	6.684	1.446
61.9	1.30034	10.821	6.698	1.4463
62	1.30093	10.826	6.712	1.4465
62.1	1.30153	10.831	6.726	1.4467
62.2	1.30212	10.836	6.74	1.447
62.3	1.30273	10.841	6.754	1.4472
62.4	1.30334	10.846	6.768	1.4474
62.5	1.30393	10.851	6.782	1.4476
62.6	1.30453	10.856	6.796	1.4479
62.7	1.30513	10.861	6.81	1.4481
62.8	1.30573	10.866	6.824	1.4483
62.9	1.30633	10.871	6.838	1.4486
63	1.30694	10.876	6.852	1.4488
63.1	1.30754	10.881	6.866	1.449
63.2	1.30815	10.886	6.88	1.4493
63.3	1.30875	10.891	6.894	1.4495

63.4	1.30936	10.896	6.908	1.4497
63.5	1.30994	10.901	6.922	1.45
63.6	1.31055	10.906	6.936	1.4502
63.7	1.31117	10.911	6.95	1.4504
63.8	1.31177	10.916	6.964	1.4507
63.9	1.31237	10.921	6.978	1.4509
64	1.31297	10.926	6.993	1.4511
64.1	1.31359	10.931	7.007	1.4514
64.2	1.31418	10.936	7.021	1.4516
64.3	1.31479	10.941	7.035	1.4518
64.4	1.3154	10.946	7.049	1.4521
64.5	1.316	10.951	7.063	1.4523
64.6	1.31661	10.956	7.078	1.4525
64.7	1.31723	10.961	7.092	1.4528
64.8	1.31784	10.967	7.107	1.453
64.9	1.31845	10.972	7.121	1.4532
65	1.31905	10.977	7.135	1.4535
65.1	1.31966	10.982	7.149	1.4537
65.2	1.32028	10.987	7.164	1.4539
65.3	1.32089	10.992	7.178	1.45422
65.4	1.3215	10.997	7.192	1.4544
65.5	1.3221	11.002	7.206	1.4546
65.6	1.32271	11.007	7.221	1.4549
65.7	1.32332	11.012	7.235	1.4551
65.8	1.32393	11.017	7.249	1.4553
65.9	1.32455	11.022	7.263	1.4556
66	1.32516	11.027	7.279	1.4558
66.1	1.32577	11.033	7.293	1.4561
66.2	1.32638	11.038	7.307	1.4563
66.3	1.32699	11.043	7.322	1.4565
66.4	1.32759	11.048	7.336	1.4568
66.5	1.3282	11.053	7.35	1.457
66.6	1.32884	11.058	7.365	1.4572
66.7	1.32945	11.063	7.379	1.4575
66.8	1.33007	11.068	7.393	1.4577
66.9	1.33068	11.073	7.408	1.458
67	1.33129	11.079	7.423	1.4582
67.1	1.33292	11.084	7.437	1.4584
67.2	1.33254	11.089	7.452	1.4587
67.3	1.33315	11.094	7.466	1.4589

67.4	1.33377	11.099	7.481	1.4591
67.5	1.33438	11.104	7.495	1.4594
67.6	1.335	11.11	7.51	1.4596
67.7	1.33562	11.115	7.525	1.4599
67.8	1.33625	11.12	7.539	1.4601
67.9	1.33686	11.125	7.554	1.4603
68	1.33748	11.13	7.568	1.4606
68.1	1.3381	11.135	7.583	1.4608
68.2	1.33872	11.14	7.597	1.4611
68.3	1.33935	11.146	7.613	1.4613
68.4	1.33997	11.151	7.627	1.4615
68.5	1.34059	11.156	7.642	1.4618
68.6	1.34121	11.161	7.656	1.462
68.7	1.34183	11.166	7.671	1.4623
68.8	1.34245	11.172	7.686	1.4625
68.9	1.34309	11.177	7.701	1.4628
69	1.34371	11.182	7.716	1.463
69.1	1.34433	11.187	7.73	1.4632
69.2	1.34495	11.192	7.745	1.4635
69.3	1.34558	11.198	7.76	1.4637
69.4	1.34621	11.203	7.775	1.464
69.5	1.34684	11.208	7.79	1.4642
69.6	1.34746	11.213	7.804	1.4644
69.7	1.34809	11.218	7.819	1.4647
69.8	1.34871	11.224	7.834	1.4649
69.9	1.34934	11.229	7.849	1.4652
70	1.34997	11.234	7.864	1.4654
70.1	1.3506	11.239	7.879	1.4657
70.2	1.35123	11.245	7.894	1.4659
70.3	1.35186	11.25	7.909	1.4661
70.4	1.35248	11.255	7.924	1.4664
70.5	1.35311	11.26	7.938	1.4666
70.6	1.35375	11.265	7.953	1.4669
70.7	1.35438	11.271	7.969	1.4671
70.8	1.35501	11.276	7.983	1.4674
70.9	1.35564	11.281	7.998	1.4676
71	1.35627	11.286	8.013	1.4679
71.1	1.35691	11.292	8.029	1.4681
71.2	1.35754	11.297	8.043	1.4684
71.3	1.35817	11.302	8.058	1.4686

71.4	1.35881	11.308	8.074	1.4688
71.5	1.35944	11.313	8.089	1.4691
71.6	1.36008	11.318	8.104	1.4693
71.7	1.36072	11.323	8.119	1.4696
71.8	1.36135	11.329	8.134	1.4698
71.9	1.36198	11.334	8.149	1.4701
72	1.36261	11.339	8.164	1.4703
72.1	1.36324	11.345	8.18	1.4706
72.2	1.36389	11.35	8.195	1.4708
72.3	1.36452	11.355	8.21	1.4711
72.4	1.36516	11.36	8.225	1.4713
72.5	1.36579	11.366	8.24	1.4716
72.6	1.36643	11.371	8.255	1.4718
72.7	1.36707	11.376	8.27	1.4721
72.8	1.36771	11.382	8.286	1.4723
72.9	1.36836	11.387	8.301	1.4725
73	1.369	11.392	8.316	1.4728
73.1	1.36964	11.398	8.332	1.473
73.2	1.37028	11.403	8.347	1.4733
73.3	1.37092	11.408	8.362	1.4735
73.4	1.37156	11.414	8.378	1.4738
73.5	1.3722	11.419	8.393	1.474
73.7	1.37347	11.43	8.424	1.4745
73.8	1.37411	11.435	8.439	1.4748
73.9	1.37476	11.44	8.454	1.475
74	1.37541	11.446	8.47	1.4753
74.1	1.37605	11.451	8.485	1.4756
74.2	1.37669	11.456	8.5	1.4758
74.3	1.37733	11.462	8.516	1.476
74.4	1.37798	11.467	8.531	1.4763
74.5	1.37864	11.473	8.547	1.4765
74.6	1.37928	11.478	8.563	1.4768
74.7	1.37993	11.483	8.578	1.477
74.8	1.38057	11.489	8.594	1.4773
74.9	1.38122	11.494	8.609	1.4776
75	1.38187	11.499	8.624	1.4778
75.1	1.38252	11.505	8.64	1.4781
75.2	1.38316	11.51	8.656	1.4783
75.3	1.38381	11.516	8.672	1.4786
75.4	1.38445	11.521	8.687	1.4788

75.5	1.3851	11.526	8.703	1.4791
75.6	1.38575	11.532	8.718	1.4793
75.7	1.3864	11.537	8.734	1.4796
75.8	1.38705	11.543	8.75	1.4798
75.9	1.3877	11.548	8.765	1.4801
76	1.38835	11.554	8.781	1.4803
76.1	1.38902	11.559	8.796	1.4806
76.2	1.38967	11.564	8.812	1.4808
76.3	1.39032	11.57	8.828	1.4811
76.4	1.39097	11.575	8.843	1.4814
76.5	1.39162	11.581	8.859	1.4816
76.6	1.39228	11.586	8.875	1.4819
76.7	1.39293	11.592	8.891	1.4821
76.8	1.39358	0.597	8.906	1.4824
76.9	1.39423	11.602	8.922	1.4826
77	1.39489	11.608	8.938	1.4829
77.1	1.39554	11.613	8.954	1.4831
77.2	1.39619	11.619	8.97	1.4834
77.3	1.39685	11.624	8.985	1.4836
77.4	1.3975	11.63	9.002	1.4839
77.5	1.39816	11.635	9.017	1.4841
77.6	1.39882	11.641	9.033	1.4844
77.7	1.39949	11.646	9.049	1.4847
77.8	1.40014	11.652	9.065	1.4849
77.9	1.4008	11.657	9.081	1.4852
78	1.40146	11.663	9.097	1.4854
78.1	1.40211	11.668	9.113	1.4857
78.2	1.40277	11.673	9.128	1.486
78.3	1.40344	11.679	9.145	1.4862
78.4	1.40409	11.684	9.16	1.4865
78.5	1.40475	11.69	9.177	1.4867
78.6	1.40541	11.695	9.192	1.487
78.7	1.40607	11.701	9.209	1.4873
78.8	1.40674	11.706	9.224	1.4875
78.9	1.4084	11.712	9.241	1.4878
79	1.40806	11.717	9.256	1.488
79.1	1.40872	11.723	9.273	1.4883
79.2	1.40938	11.728	9.289	1.4886
79.3	1.41005	11.734	9.305	1.4888
79.4	1.41072	11.74	9.322	1.4891



79.5	1.41138	11.745	9.337	1.4893
79.6	1.41204	11.751	9.354	1.4896
79.7	1.4127	11.756	9.37	1.4899
79.8	1.41337	11.762	9.386	1.4901
79.9	1.41404	11.767	9.402	1.4904
80	1.41471	11.773	9.418	1.4906