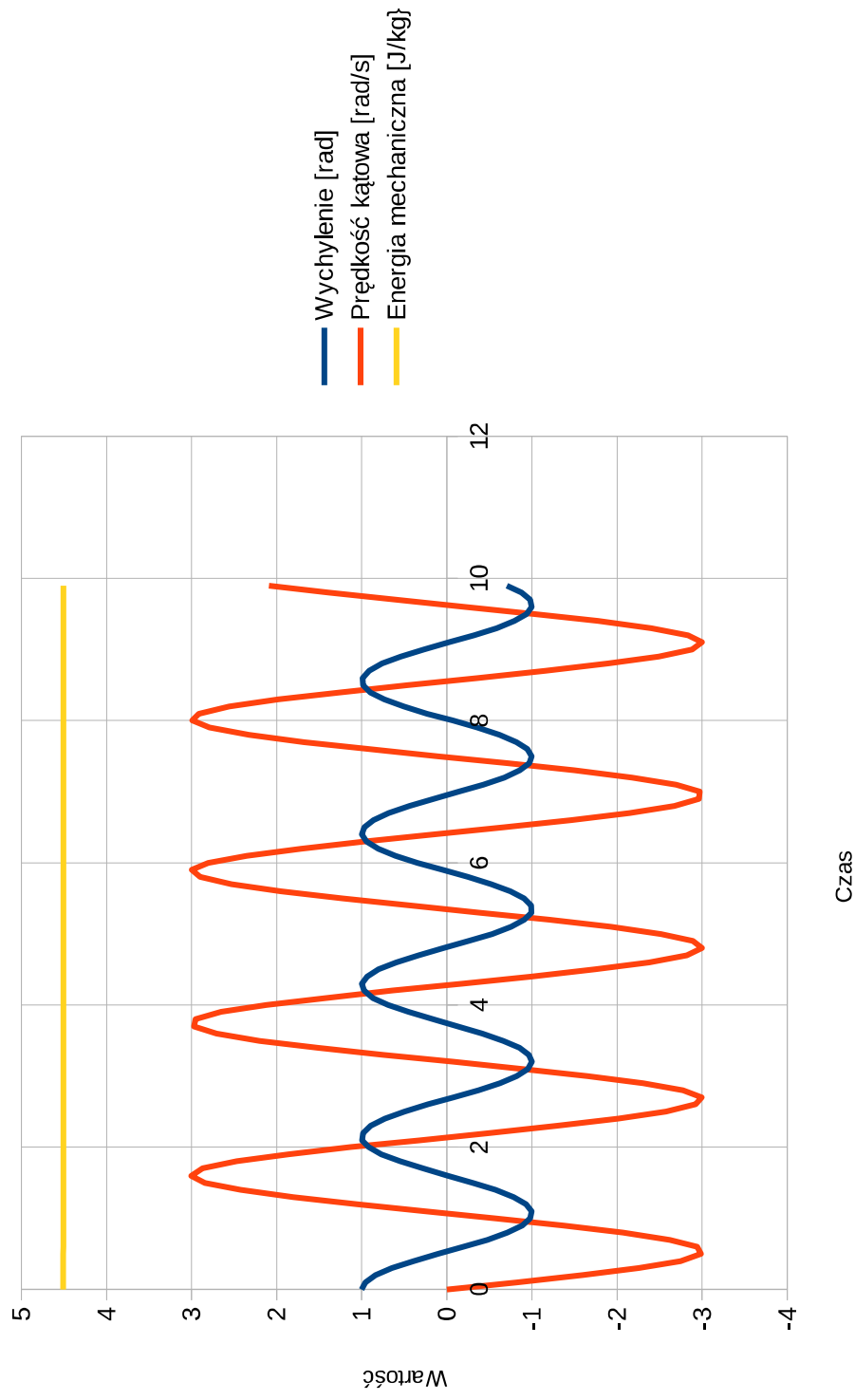


wykres

Wyniki całkowania

długość 1m, wychylenie początkowe 1 rad, prędkość początkowa 0 rad/s, przyspieszenie grawitacyjne 9,81 m/s²



output

output

t	alfa	omega	energia
0	1	0	4.50963
0.1	0.958911	-0.818016	4.5096
0.2	0.837951	-1.58889	4.50953
0.3	0.644635	-2.25424	4.50948
0.4	0.39301	-2.74283	4.50948
0.5	0.104338	-2.98534	4.50949
0.6	-0.194389	-2.94096	4.5094
0.7	-0.474451	-2.61751	4.50925
0.8	-0.710276	-2.06733	4.50916
0.9	-0.882763	-1.36286	4.50916
1	-0.979985	-0.57218	4.50919
1.1	-0.996138	0.250536	4.50918
1.2	-0.930328	1.05953	4.50913
1.3	-0.786324	1.80519	4.50906
1.4	-0.573486	2.42469	4.50903
1.5	-0.308052	2.84508	4.50904
1.6	-0.01331	3.00272	4.50902
1.7	0.282714	2.87036	4.50891
1.8	0.551771	2.47101	4.50877
1.9	0.770024	1.86615	4.50871
2	0.920587	1.12892	4.50872
2.1	0.993543	0.323403	4.50874
2.2	0.984678	-0.49988	4.50872
2.3	0.894482	-1.29535	4.50866
2.4	0.728285	-2.00996	4.5086
2.5	0.497418	-2.57673	4.50858
2.6	0.22034	-2.92281	4.5086
2.7	-0.0778515	-2.99294	4.50855
2.8	-0.368529	-2.7748	4.50842
2.9	-0.62436	-2.30543	4.50829
3	-0.82348	-1.65279	4.50826
3.1	-0.95121	-0.888746	4.50828
3.2	-0.999515	-0.0729789	4.5083
3.3	-0.965672	0.746758	4.50826
3.4	-0.851569	1.52385	4.50819
3.5	-0.664212	2.20116	4.50814
3.6	-0.41702	2.70829	4.50814
3.7	-0.130638	2.97475	4.50815
3.8	0.168323	2.95616	4.50807
3.9	0.451097	2.6558	4.50792
4	0.691669	2.12289	4.50783
4.1	0.870301	1.4292	4.50782
4.2	0.974463	0.643838	4.50784
4.3	0.997866	-0.177849	4.50784
4.4	0.93921	-0.989821	4.5078
4.5	0.801834	-1.74327	4.50773
4.6	0.594546	-2.37669	4.50769
4.7	0.332943	-2.81744	4.5077
4.8	0.0397427	-2.99998	4.50769
4.9	-0.257291	-2.89298	4.50758
5	-0.52973	-2.51512	4.50744
5.1	-0.75321	-1.92548	4.50737

5.2	-0.910202	-1.19721	4.50738
5.3	-0.990219	-0.3956	4.5074
5.4	-0.988598	0.427845	4.50739
5.5	-0.905428	1.22762	4.50733
5.6	-0.745578	1.95173	4.50726
5.7	-0.519794	2.53438	4.50724
5.8	-0.245894	2.90247	4.50726
5.9	0.0515255	2.99807	4.50722
6	0.343968	2.80445	4.50709
6.1	0.603797	2.35474	4.50696
6.2	0.808561	1.71529	4.50692
6.3	0.942949	0.958513	4.50694
6.4	0.998395	0.145345	4.50696
6.5	0.971754	-0.675747	4.50693
6.6	0.864507	-1.45856	4.50686
6.7	0.683163	-2.1472	4.5068
6.8	0.44053	-2.67215	4.5068
6.9	0.156626	-2.962	4.50681
7	-0.14234	-2.96902	4.50674
7.1	-0.427602	-2.69196	4.5066
7.2	-0.672728	-2.17676	4.50649
7.3	-0.857361	-1.49431	4.50648
7.4	-0.968359	-0.714648	4.5065
7.5	-0.998944	0.105671	4.50651
7.6	-0.947412	0.920225	4.50646
7.7	-0.816676	1.68094	4.50639
7.8	-0.615013	2.32758	4.50635
7.9	-0.357387	2.78801	4.50636
8	-0.0659313	2.99501	4.50635
8.1	0.231883	2.91331	4.50626
8.2	0.507488	2.55724	4.50611
8.3	0.736017	1.98328	4.50603
8.4	0.899307	1.2644	4.50604
8.5	0.986294	0.467055	4.50606
8.6	0.991859	-0.356212	4.50605
8.7	0.915695	-1.15986	4.506
8.8	0.762222	-1.8929	4.50593
8.9	0.541617	-2.49073	4.5059
9	0.271059	-2.88019	4.50592
9.1	-0.0253746	-3.00091	4.50589
9.2	-0.319354	-2.83187	4.50576
9.3	-0.582976	-2.4022	4.50563
9.4	-0.793222	-1.77641	4.50558
9.5	-0.93415	-1.0273	4.5056
9.6	-0.996656	-0.217071	4.50562
9.7	-0.977169	0.605022	4.50559
9.8	-0.876771	1.3931	4.50553
9.9	-0.70149	2.09244	4.50547