

TGM

Tables of Dublogs
from TGM booklet



Dozenal Society of Great Britain

<http://www.dozenalsociety.org.uk>

Dlg $\pi = 1;7999\ 510\ 3$
 Dlg $\frac{1}{\pi} = \bar{2};4222\ 6\bar{2}\ 0\ 3$

D U B L O G S
 Logarithms to Base Two
 in Dozenal Notation

(54) Dlg $e = 1;538\ 884\ 0$
 Dlg $\frac{1}{e} = \bar{2};6830\ 3380\ 0$

n	Dunis											Mean Differences										
	0	1	2	3	4	5	6	7	8	9	Z	E	1	2	3	4	5	6	7	8	9	Z
1;0	0;0000	0153	0275	0435	0584	0711	0859	0974	0E29	1072	11E5	1336	1529	4257	6E84	98	98	11	*	117	*	
1;1	1477	15E6	1734	1870	1978	1E22	2058	2190	2303	2434	2565	2695	1327	3752	6578	90	73	E	710	*		
1;2	2804	2931	275Z	2E85	307E	3215	3339	3461	3583	3675	3805	3925	1225	3749	6072	84	97	Z	9E	*		
1;3	0;3744	3E61	407Z	4196	42E1	4407	4520	4635	4748	485E	4971	4Z82	1123	3465	5768	7Z	8E	Z	1E	*		
1;4	4E92	50Z2	51E0	52EZ	5407	5513	561E	5725	582E	5935	5Z39	5E41	1121	3242	5364	74	85	95	26	E7		
1;5	6044	6146	6248	6349	6449	6548	6647	6745	6843	693E	6Z37	6E33	1020	3040	405E	6E	7E	8E	9E	ZE		
1;6	0;702Z	7124	721Z	7312	7407	74EZ	75E1	76Z4	7796	7887	7978	7Z68	E	1Z2Z	394E	857	67	7E	85	94	Z4	
1;7	7E57	8046	8135	8222	8310	83E8	84Z4	8590	8677	8761	8847	8931	E	1928	3745	54	63	71	80	8E	99	
1;8	8Z16	8Z8Z	8E7Z	9085	9168	924E	9330	9412	94E3	9593	9673	975Z	Z	1E26	3543	51	5E	69	77	85	93	
1;9	0;9831	9910	99Z7	9Z78	9E64	7041	Z119	Z1E5	Z290	Z367	Z441	Z517	Z	1Z25	3340	4Z	58	65	73	81	8Z	
1;Z	Z5E1	Z686	Z75E	Z833	Z907	Z99Z	Z1Z2	Z244	E016	E0Z8	E179	E24Z	9	16Z4	313Z	47	55	6Z	7E	8E	86	
1;E	E31E	E3ZE	E47E	E54Z	E619	E6Z8	E77E	E844	E91Z	E95E	EZ68	E334	9	15Z2	2E3E	45	5Z	6E	74	81		
2;0	1;0000	0088	0153	021Z	0275	036E	0435	04EZ	0584	0649	0711	0795	8	15Z1	2Z36	43	4E	5E	64	71	79	
2;1	0859	0921	09Z4	0Z67	0E29	0E00	1072	1133	11E5	1Z75	1336	13E6	8	14Z0	2935	41	49	55	61	6Z	76	
2;2	1477	1536	15E6	1675	1734	17E2	1870	19Z7	1Z78	1Z65	1E22	1E9E	8	14Z0	2Z33	3E	4Z	5E	66	7Z		
2;3	1;2058	2114	2190	224Z	2303	237Z	2434	24ZE	2565	261E	2695	274Z	8	131E	2632	39	45	50	58	64	6E	
2;4	2804	2878	2931	29Z5	2Z5Z	2E11	2E85	3038	30ZE	316Z	3215	3287	7	131Z	2530	38	43	4Z	56	61	68	
2;5	3339	33ZE	3461	351Z	3583	3634	3675	3755	3805	3875	3925	3994	7	1219	24ZE	36	41	48	53	5Z	66	
2;6	1;3Z44	3ZE2	3E61	4010	407Z	41Z8	4196	4Z44	4ZE1	435Z	4407	4474	7	1Z1E	23Z7	35	40	46	51	58	63	
2;7	4520	4589	4635	46Z1	4748	47E4	485E	4906	4971	4Z18	4Z8Z	4E28	7	111E	22Z9	34	3Z	45	4E	56	61	
2;8	4E9Z	5038	50Z2	514Z	51E0	5255	5ZEZ	5363	5407	546E	5513	5577	6	111Z	22Z8	3Z	39	43	4Z	54	5Z	
2;9	1;561E	568Z	5Z75	5789	582E	589Z	5935	5997	5Z39	5Z9E	5E41	5EZ2	6	101Z	21Z7	31	3Z	4Z	48	5Z	58	
2;Z	6044	60Z5	6146	61Z7	6Z48	6Z28	6349	63Z9	6449	64Z9	6548	65Z8	6	101Z	20Z6	30	36	40	46	50	56	
2;E	664Z	66Z6	6745	6Z74	6843	68Z1	693E	699Z	6Z3Z	6Z95	6E33	6E90	6	101E	1E25	2E	35	3E	43	4E	54	
3;0	1;702Z	7087	7124	7181	721Z	7276	731Z	736E	7407	7463	74EZ	7556	6	E	151E	24Z2	34	3Z	43	49	53	
3;1	75E1	7649	76Z4	773E	7796	7830	7887	7921	7978	7Z1Z	7Z68	7E0Z	6	E	151Z	24Z9	33	3E	4Z	47	51	
3;2	7E57	7E51	8046	809E	8135	8189	822Z	8Z77	8310	8364	83E8	8450	5	E	141Z	23Z8	3Z	37	41	46	4E	
3;3	1;84Z4	8538	8590	8623	8677	870Z	8761	8Z4E	884Z	889Z	8931	8983	5	E	141Z	2Z28	31	36	3E	45	4Z	
3;4	8Z16	8Z68	8E7Z	8E50	8E7Z	9034	9085	9117	9168	91E9	924E	9Z20	5	Z	1319	2Z27	30	35	3Z	43	48	
3;5	9330	9381	941Z	946Z	94E3	9543	9593	9623	9673	9703	975Z	9Z7Z	5	Z	131E	2Z26	2E	34	39	4Z	47	
3;6	1;9831	9881	9910	995E	99Z7	9Z39	9Z87	9E16	9E64	9E3E	Z041	Z08E	5	Z	131E	20Z5	2Z	33	38	41	46	
3;7	Z119	Z167	Z1E5	Z24Z	Z290	Z31Z	Z367	Z3E4	Z441	Z48E	Z517	Z564	5	Z	1Z1Z	20Z5	29	3Z	3Z	40	45	
3;8	Z5Z1	Z6Z2	Z686	Z71Z	Z75E	ZZ7Z	Z833	Z8Z7	Z907	Z95E	Z99Z	ZZ2E	5	Z	1Z1Z	1E24	29	31	36	3E	43	
3;9	1;ZZ71	ZZ7Z	ZZ44	ZE3E	E016	E061	E0Z8	E133	E179	E204	E24Z	E295	5	9	1Z1E	1E23	28	31	35	3Z	4Z	
3;Z	E31E	E365	E3ZE	E435	E47E	E505	E54Z	E594	E619	E663	E6Z8	E731	4	9	111E	1E23	27	30	34	39	41	
3;E	E77E	E7E3	E844	E889	E91Z	E956	E99E	EZ23	EZ68	EZ0E	E334	E3Z8	4	9	111E	1E2Z	2Z	2E	33	38	40	
4;0	2;0000	0044	0088	010E	0153	0197	021Z	0261	0Z75	03Z8	036E	03E2	4	9	111E	151Z	2Z	2Z	33	3Z	3E	
4;1	0435	0478	04EZ	0541	0584	0606	0649	068E	0711	0753	0795	0817	4	8	111E	151Z	21	25	2Z	3Z	3E	
4;2	0859	089E	0921	096Z	09Z4	0Z7Z	0Z67	0Z78	0E29	0E6E	0E0E	1031	4	8	101E	141Z	21	25	29	31	35	39
4;3	2;107Z	10Z2	1133	1174	11E5	1Z35	1Z75	1ZE6	1336	1376	13E6	1437	4	8	101E	141Z	20	24	28	30	34	38
4;4	1477	14E6	1536	1576	15E6	1635	1675	16E4	1734	1773	17E2	1831	4	8	101E	141Z	20	24	28	30	34	37
4;5	1870	18ZE	19Z2	1969	19Z8	1Z2Z	1Z65	1ZZ4	1E2Z	1E61	1E9E	2019	4	8	101E	141Z	1E	23	2Z	2E	33	3Z
4;6	2;2058	2096	2114	215Z	2190	2Z0Z	2Z4Z	2Z85	2303	2340	23Z7	2E3Z	4	8	E	131Z	1E	23	26	2Z	3Z	36
4;7	2434	24Z2	24ZE	25Z8	2565	25Z2	261E	2658	2695	271Z	274Z	2Z8Z	4	8	E	131Z	1E	2Z	26	2Z	3Z	35
4;8	2804	2840	2878	28E5	2931	2969	29Z5	2Z2Z	2Z5Z	2Z96	2E11	2E49	4	7	E	131E	1Z	2Z	25	29	31	34
4;9	2;2E85	3001	3038	3074	30ZE	31Z7	316Z	319Z	3215	3Z50	3Z8Z	330Z	4	7	E	1Z1E	1Z	21	25	29	30	34
4;Z	3339	3374	33ZE	3426	3461	349Z	351Z	3549	3583	35ZZ	3634	366Z	4	7	E	1Z1E	19	21	24	28	30	33
4;E	36Z5	371E	3755	378E	3805	383E	3875	38ZE	39Z5	395E	3994	3Z0Z	3	7	Z	1Z1E	19	20	24	2Z	2E	3Z

#10ⁿ 3;702Z 7;2058 Z;9085 12;40E3 15;E1Z1 19;614E 21;1178 24;81Z6 28;3Z14
 n 1 2 3 4 5 6 7 8 9
 #2ⁿ 3;3Z44 1,3;0859 2,2;9673 3,2;6489 4,2;3Z2Z 5,2;00E8 6,1;8E1Z 7,1;59Z8 8,1;Z741

*3-figure differences omitted for space. Add value column 1 to previous difference.

n	Dunis										Mean Differences												
	0	1	2	3	4	5	6	7	8	9	z	£	1	2	3	4	5	6	7	8	9	z	£
9;0	3;2058	2077	2096	20E5	2114	2133	2152	2171	2190	21Z£	220Z	2228	2	4	6	8	Z	£	11	13	15	17	19
9;1	2247	2266	2285	22Z4	2303	2321	2340	235E	237Z	2398	23E7	2416	2	4	6	8	9	£	1'	13	15	17	19
9;2	2434	2453	2472	2490	24Z£	250Z	2528	2547	2565	2584	25Z2	2601	2	4	6	8	9	£	11	13	15	17	19
9;3	3;261E	263Z	2658	2677	2695	26E3	2712	2730	274Z	2769	2787	27Z5	2	4	6	7	9	£	11	13	15	17	19
9;4	2804	2822	2840	285Z	2878	2897	28E5	2913	2931	294E	2969	2987	2	4	6	7	9	£	11	13	15	16	18
9;5	29Z5	2Z04	2Z22	2Z40	2Z5Z	2Z78	2Z96	2Z£3	2E11	2E2E	2E49	2E67	2	4	6	7	9	£	11	13	14	16	18
9;6	3;2E85	2E73	3001	301E	3038	3056	3074	309Z	30ZE	3109	3127	3145	2	4	5	7	9	£	11	12	14	16	18
9;7	3162	3180	319Z	31E7	3215	3232	3250	326Z	328Z	32Z5	3302	3320	2	4	5	7	9	£	11	12	14	16	18
9;8	3339	3357	3374	339Z	33ZE	3409	3426	3443	3461	347Z	3497	34E5	2	4	5	7	9	£	10	12	14	16	18
9;9	3;3512	352E	3549	3566	3583	35Z0	35EZ	3617	3634	3651	366Z	3688	2	4	5	7	9	£	10	12	14	16	17
9;Z	36Z5	3702	371E	3738	3755	377Z	378E	37Z8	3805	3822	383E	3858	2	4	5	7	9	£	10	12	14	16	17
9;£	3875	389Z	38ZE	3908	3925	394Z	395E	3977	3994	39E1	3Z0Z	3Z27	2	3	5	7	9	Z	10	12	14	15	17
Z;0	3;3Z44	3Z60	3Z79	3Z96	3ZE2	3E0E	3E28	3E45	3E61	3E7Z	3E97	3E£3	2	3	5	7	9	Z	10	12	14	15	17
Z;1	4010	4028	4045	406Z	407Z	4097	40E3	4110	4128	4145	4161	417Z	2	3	5	7	9	Z	10	12	13	15	17
Z;2	4196	41E2	420E	4227	4244	4260	4278	4295	42E1	4309	4326	434Z	2	3	5	7	8	Z	10	12	13	15	17
Z;3	3;435Z	4376	4393	43ZE	4407	4423	4440	4458	4474	4490	44Z8	4504	2	3	5	7	8	Z	10	11	13	15	16
Z;4	4520	4539	4555	4571	4589	45Z5	4601	4619	4635	4651	4669	4685	2	3	5	7	8	Z	10	11	13	15	16
Z;5	46Z1	46E9	4715	4730	4748	4764	4780	4798	4ZE4	4810	4827	4843	2	3	5	7	8	Z	10	11	13	15	16
Z;6	3;485E	4877	4893	48ZZ	4906	4922	493Z	4955	4971	4989	49Z4	4Z00	2	3	5	7	8	Z	£	11	13	14	16
Z;7	4Z18	4Z33	4Z4E	4ZE6	4Z8Z	4Z9Z	4ZE5	4E11	4E28	4E44	4E5E	4E7Z	2	3	5	7	8	Z	£	11	13	14	16
Z;8	4E9Z	4EZZ	5005	5021	5038	5053	506E	5086	50Z2	50E9	5114	5130	2	3	5	6	8	Z	£	11	13	14	16
Z;9	3;5147	516Z	517Z	5195	51E0	5207	5223	523Z	5255	5270	5288	52Z3	2	3	5	6	8	Z	£	11	12	14	16
Z;Z	5ZEZ	5315	5330	5348	5363	537Z	5395	53E0	5407	5422	5439	5454	2	3	5	6	8	Z	£	11	12	14	15
Z;£	546E	5486	54Z1	54E8	5513	552Z	5545	5560	557Z	559Z	55Z9	5604	2	3	5	6	8	Z	£	11	12	14	15
E;0	3;561E	5636	5651	566Z	5E8Z	5699	56E4	570E	5725	5740	575Z	577Z	2	3	5	6	8	9	£	11	12	14	15
E;1	5789	57Z3	57EZ	5815	58ZE	5846	5861	587Z	589Z	58Z9	5903	591Z	2	3	5	6	8	9	£	10	12	14	15
E;2	5935	594E	5966	5980	599Z	59E2	5Z08	5Z23	5Z39	5Z54	5Z6Z	5Z85	2	3	5	6	8	9	£	10	12	13	15
E;3	3;5Z9E	5ZE6	5E10	5E26	5E41	5E5Z	5E7Z	5E88	5EZ2	5EE9	6013	60Z7	2	3	5	6	8	9	£	10	12	13	15
E;4	6044	605Z	6074	608E	60Z5	60EE	6116	6130	6146	6160	617Z	6191	2	3	5	6	8	9	£	10	12	13	15
E;5	61Z7	6201	621Z	623Z	6248	626Z	6278	629Z	62Z8	630Z	6318	6333	2	3	5	6	8	9	£	10	12	13	15
E;6	3;6349	6363	6379	6393	63Z9	6403	6419	6433	6449	6463	6479	6493	2	3	5	6	8	9	£	10	12	13	15
E;7	64Z9	6503	6518	653Z	6548	656Z	6578	659Z	65Z8	660Z	661Z	6631	1	3	4	6	7	9	Z	10	11	13	14
E;8	6647	6661	667Z	6690	66Z6	6700	6716	67ZE	6745	675E	6775	678Z	1	3	4	6	7	9	Z	10	11	13	14
E;9	3;67Z4	67EZ	6813	6829	6843	6858	687Z	688Z	68Z1	68E7	6910	6926	1	3	4	6	7	9	Z	10	11	13	14
E;Z	693E	6955	696Z	6984	699Z	69E3	6Z09	6Z2Z	6Z3Z	6Z51	6Z66	6Z80	1	3	4	6	7	9	Z	10	11	13	14
E;£	6Z95	6ZZE	6E04	6E1Z	6E33	6E48	6E6Z	6E7Z	6E90	6EZE	6EEE	7014	1	3	4	6	7	9	Z	10	11	13	14
10;	3;70ZZ	£10 ⁿ	54;6428	58;1456	5E;8484	63;34E1	66;Z51E	6Z;5549	7Z;057Z														
		n	16	17	18	19	1Z	1E	20														
		Z ⁿ	14,2;528Z	15,2;2098	16,1;ZZE2	17,1;7908	18,1;4Z21	19,1;153Z	1Z,0;Z351														

S I M P L O G S

n		Dlg		n		Dlg		Ablog				Dublog				Mixed characteristic			
1	0;0	4;6	2,5;0	1	0;0	4;6	2,5;0	Dlg 2 ; 6 4 8 = 1 ; 4 1 0 4				Dlg 2648;0 = 3 , 1 ; 4 1 0 4				orderistic = 3 , 1 ; 4 1 0 4			
1;4	1,4;0	5;4	1,6;0	1;4	1,4;0	5;4	1,6;0	units				mantissa				orderistic			
1;6	1,3;0	6	1,1;0	1;6	1,3;0	6	1,1;0	zenis				characteristic				(power of £10)			
2	1;0	6;9	3,8;0	2	1;0	6;9	3,8;0	dunis				trinis				(power of 2)			
2;3	2,6;0	8	3;0	2;3	2,6;0	8	3;0	Mixed dublog:				3,1;4104				Straight dublog:			
2;8	1,5;0	9	2,4;0	2;8	1,5;0	9	2,4;0	adjuster:				-3,Z;9085+				adjuster: +3,Z;9085-			
3	1,2;0	Z;8	1,7;0	3	1,2;0	Z;8	1,7;0	Straight dublog:				10;1189				Mixed dublog:			
4	2;0	£10	1,0;0	4	2;0	£10	1,0;0												

zeniDoubles at the keyboard:



Examples:-

1. Find the dublog of 3;572. Down the lefthand column to 3;5, then across till under 7 (dunis) and note "9623". Further along same line under 2 (trinis) is "7". Add these, and prefix the characteristic "1;" (on left of the block of numbers), gives:-

$$\text{Dlg } 3;572 = 1;9631$$

2. Find the ablog (short for antidublogarithm) of 2;3245. In the body of the table we find "2;3215" (..30 short) for which the ablog is 4;98. Further along same line is "30" under 7 (trinis). So:-

$$\text{Abg } 2;3245 = 4;98Z$$

3. Find dlg 1764 and dlg 0;001764. Treat these as $1;764 \times 10^3$ and $1;764 \times 10^{-3}$.

$$\begin{array}{r} \text{dlg } 1;764 = 0;Z772 \\ \text{add } \frac{\text{dlg } 10^3 = 7;9085}{\text{dlg } 1764 = 3;7367} \end{array} \qquad \begin{array}{r} \text{dlg } 1;764 = 0;Z772 \\ \frac{\text{dlg } 10^{-3} = 7;9085}{\text{dlg } 0;001764 = \bar{7};1219} \text{ subtract} \end{array}$$

An alternative form is 3,0;Z772 and $\bar{3},0;Z772$, using mixed characteristics. Just as hours, mins, secs, can be put adjacent for calculation, so can powers of zen (to the left of the comma), and powers of two (right of the comma). This form can save looking up dublogs every time a power of zen is encountered.

4. Find the dublog of:- $\frac{21;98 \times 0;0Z793}{522;6}$

$$\begin{array}{r} \text{dlg } 21;98 = 1,1;130Z \\ \text{dlg } 0;0Z793 = \bar{2},3;4349 \\ \qquad \qquad \qquad \bar{1},4;625Z \\ \text{dlg } 522;6 = 2,2;45Z5 \\ \text{Answer: mixed dublog } \bar{3},2;1872 \qquad \text{abg } \bar{3},2;1872 = 0;0045 \\ \text{adjuster } +3,7;9085- \text{ OR } +3,7;9085- \\ \text{pure dublog } \bar{9};47Z9 \qquad \qquad \qquad -8;7413 \end{array}$$

The adjuster to convert from mixed to pure dublogs consists simply of adding 3 to the power of zen (left of comma) and subtracting the dublog of 10^3 .

ADJUSTERS may refer to any integral power of zen. They are always negative at one end, positive at the other. Since they add what they subtract, their absolute value is always zero.

To get the ablog of the answer in example 4, ignore the adjuster, find ablog of 2;1872, then move the dit point three places to left in accordance with the orderistic "3".

5. Find $\text{dlg } 73;9Z^3$. $\text{dlg } 73;9Z = 1,2;Z560$
 multiply by 3 = 3,8;7460
 adjuster $\frac{+2,7;2058-}{5,1;5404}$ $\text{abg} = 287\text{E}60$

6. Find $\text{dlg } 0;0\text{E}963^{1/3}$. For roots the orderistic must first be adjusted to a multiple of the root index.

$$\begin{array}{r} \text{dlg } 0;0\text{E}963 = \bar{2},3;6876 \\ \text{adjuster } \frac{-1,3;70Z7+}{\bar{3},7;18Z4} \\ \text{divide by } 3 = \bar{1},2;46\text{E}5 \qquad \text{abg} = 0;5265 \end{array}$$

7. The low base and mixed characteristics gives rise to families of dublogs easy to memorise:-

<u>Term</u>	<u>Dublog</u>	<u>Application</u>	<u>Term</u>	<u>Dublog</u>	<u>Application</u>
π	1;7999	general	$\pi/2$	0;7999	rightangle
2π	2;7999	1 circle, 1 rev.	$\pi/4$	1;7999	45° , 3 zenIPi
4π	3;7999	surface of sphere	$\pi/6$	$\bar{1},2;7999$	30° , 2 zenIPi
$4\pi/3$	$\bar{1},5;7999$	volume ,, ,,	$0;8\pi$	$\bar{1},4;7999$	120° , 3-phase
8π	4;7999	in Planck's constant	$\neq 2800\pi$	2,6;7999	$\neq 1400$ revs.

Physical Constants

Symbol	Description	Value dozenal	TGM units	Logarithms		Metric SI equivalents		
				Zlg	Dlg	value	$\times 10^n$ units	
g	Accel.due to gravity	1	G	0;0000	0;0000	9.810 049	0 m/s ²	
M	Avogadro's (TGM)	1;4397 4	²² Mlz	22;1596	79;7928	6.022 04	23 /mol	
m _u	Atomic mass unit = mMz	8;9286 5	²³ Mz	23;2623	79;4207	1.660 57	-27 kg	
Atz	Atmos.pressure std.	2£	Pm	1;5205	5;1675	1.015 204	5 N/m ²	
R _o	Gas constant	1;£277 58	PmVm/Cg	0;3327	0;££02	8.314 3	0 J/K	
V _o	Normal gas volume	1;0£41 7	⁴ Vm/Mlz	4;0449	12;5484	2.241 36	-2 m ³ /mol	
c	Velocity of light	47£4 9923	exact V1	7;782£	23;4840	299 792 458	exact m/s	
c ²	(ditto) ² = 1/(µ _o o)	20;1714 5	¹² Vv	13;3457	46;9480	8.987 552 16	m ² /s ²	
ly	Lightyear	2;0£06 1606	¹³ Gf	13;3642	46;9£40	9.460 528	15 m	
µ _o	Permeability of space	2π	⁹ Gn/Gf	9;8261	26;4788	4π	-7 H/m	
o	Permittivity ,, ,,	0;£490 6147	⁷ Kp/Gf	8;£901	22;9£78	8.854 188	-12 F/m	
G	Gravitational const.	7;462	⁹ QMz/Mz ²	9;£36£	25;13£3	6.672	-11 N m ² /kg ²	
h	Planck's constant	1;8266 42	²⁸ WgTm	28;2813	96;0£68	6.626 18	-34 J s	
c ₁	8πhc	1;5299 4	^{1£} WgGf	1£;1£23	67;1585	4.992 57	-24 Jm	
c ₂	hc/k	5;7071	^{1£} GfCg	1;8631	6;169£	1.438 79	-2 mK	
k	Boltzmann's c. R _o /M=	1;5694 9	²² Wg/Cg	22;1712	79;4109	1.380 66	-23 J/K	
R _∞	Rydberg's constant	1;1058 £487	⁶ /Gf	6;0497	19;7681	1.097 373	7 /m	
<u>Electron:-</u>								
e	charge	4;1691 50	¹⁵ Q1	15;6224	4£;1281	1.602 189	-19 C	
m _e	rest mass	8;4469 0	²⁶ Mz	26;7311	89;6227	9.109 53	-31 kg	
m _{ec} ²	rest energy	1;4915 5	¹⁷ Wg	17;1746	42;3619	8.187 24	-14 J	
e/m _e	charge/mass ratio	5;£126 34	¹⁰ Q1/Mz	10;8713	39;7053	1.758 805	11 C/kg	
r _e	classical radius	1;029£ £8	¹¹ Gf	11;0119	3£;5100	2.817 939	-15 m	
ePl	electron-Pel	4;1691 50	¹⁵ Wg	15;6224	4£;1281	8.712 608	2 e-volts	
Me	Emelectron	5;7496 90	⁹ Q1	9;8400	27;9077	2.585 036	4 faraday	
<u>Proton:-</u>								
m _p	rest mass	8;77£5 6	²³ Mz	23;2677	77;4368	1.672 65	-27 kg	
m _{pc} ²	rest energy	1;5260 7	[£] Wg	£;1£13	33;1828	1.503 30	-10 J	
e/m _p	charge/mass ratio	5;62£5 5	⁹ Q1/Mz	9;8370	27;8£16	9.578 75	7 C/kg	
<u>Neutron:-</u>								
m _n	rest mass	8;7986 £	²³ Mz	23;2684	77;4322	1.674 95	-27 kg	
m _{nc} ²	rest energy	1;5297 3	[£] Wg	£;1£24	33;1862	1.505 37	-10 J	
µ _B	Bohr magneton	9;7170 4	¹⁹ Wg/Fz	19;£067	60;0221	9.274 09	-24 J/T	
Ci	Curie	1;3	⁹ /Tm	9;10£2	28;7057	3.7	10 /s	
σ	Stefan-Boltzmann	1;5823	¹² Pv/S£Cg	12;125£	67;8346	5.669 7	-8 W/m ² K ⁴	
<u>Earth:-</u>								
	polar dia	⁸ Gf/Z	1;2496 704	⁷ Gf	7;0769	21;4362	1.271 351	7 m
	equator length	3;9481 £13	⁷ Gf	7;6512	23;0204	4.007 504	7 m	
	l _{PI} long. equator	1;2840 £67	⁶ Gf	6;30£2	12;5196	1.669 793	6 m (15°)	
	mass	5;0347	¹⁹ Mz	19;7966	65;7431	5.974 2	24 kg	
	tropical year	5;0259 9057	⁴⁵⁶ 7Tm	7;7213	23;5300	31 556 925.974	7 s	
<u>Moon:-</u>								
	mean distance	3;0346	⁸ Gf	8;5415	26;3389	3.844	8 m	
	diameter (linear)	3;£2£	⁶ Gf	6;6741	1£;5213	3.476	6 m	
	,, (mean angular)	1;376	² rGf	2;1337	7;2645	31'05"		
<u>Sun:-</u>								
	mean dist. = Astron.U	8;2077 420	⁷ Gf	7;2189	32;268£	1.4959787	11 m	
	diameter (linear)	7;£526 £	⁸ Gf	8;£686	28;1719	1.39253	9 m	
	,, (mean angular)	1;410	² rGf	2;14£9	7;3047	31'59"		
	mass	6;87£7	²² Mz	22;9250	7£;£5£3	1.9891	30 kg	
	effective temp'ture	2;7	⁶ Cg	6;5043	12;0193	5800	0 K	
π	Circumf./diameter	3;1848 0949	^{3£91} 82	0;5641	1;7999	3.141 592 653 590		
e	Natural log. base	2;8752 3606	⁹⁸²¹ 76	0;49£5	1;5390	2.718 281 828 459		