

DIGAMMA FUNCTION FOR COMPLEX ARGUMENTS

Table 6.8

$x=1.5$			$x=1.6$			$x=1.5$			$x=1.6$		
y	$\Re \psi(z)$	$\Im \psi(z)$	y	$\Re \psi(z)$	$\Im \psi(z)$	y	$\Re \psi(z)$	$\Im \psi(z)$	y	$\Re \psi(z)$	$\Im \psi(z)$
0.0	0.03649	0.00000	5.0	1.62756	1.37278	0.0	0.12605	0.00000	5.0	1.63162	1.35357
0.1	0.04062	0.09325	5.1	1.64667	1.37658	0.1	0.12955	0.08566	5.1	1.65057	1.35773
0.2	0.05284	0.18511	5.2	1.66543	1.38025	0.2	0.13995	0.17023	5.2	1.66919	1.36173
0.3	0.07266	0.27432	5.3	1.68386	1.38378	0.3	0.15687	0.25268	5.3	1.68748	1.36558
0.4	0.09932	0.35978	5.4	1.70196	1.38719	0.4	0.17976	0.33214	5.4	1.70546	1.36930
0.5	0.13189	0.44066	5.5	1.71976	1.39047	0.5	0.20790	0.40789	5.5	1.72313	1.37289
0.6	0.16935	0.51640	5.6	1.73725	1.39364	0.6	0.24050	0.47942	5.6	1.74051	1.37635
0.7	0.21064	0.58668	5.7	1.75445	1.39670	0.7	0.27674	0.54642	5.7	1.75760	1.37969
0.8	0.25479	0.65144	5.8	1.77137	1.39965	0.8	0.31581	0.60875	5.8	1.77441	1.38293
0.9	0.30091	0.71078	5.9	1.78801	1.40251	0.9	0.35697	0.66642	5.9	1.79095	1.38605
1.0	0.34824	0.76494	6.0	1.80439	1.40528	1.0	0.39957	0.71957	6.0	1.80724	1.38908
1.1	0.39614	0.81424	6.1	1.82051	1.40796	1.1	0.44305	0.76840	6.1	1.82327	1.39200
1.2	0.44411	0.85907	6.2	1.83638	1.41055	1.2	0.48692	0.81319	6.2	1.83906	1.39484
1.3	0.49175	0.89980	6.3	1.85201	1.41306	1.3	0.53082	0.85423	6.3	1.85460	1.39759
1.4	0.53878	0.93684	6.4	1.86741	1.41549	1.4	0.57445	0.89183	6.4	1.86992	1.40025
1.5	0.58497	0.97054	6.5	1.88258	1.41786	1.5	0.61757	0.92629	6.5	1.88501	1.40284
1.6	0.63018	1.00127	6.6	1.89752	1.42015	1.6	0.66001	0.95790	6.6	1.89989	1.40534
1.7	0.67432	1.02932	6.7	1.91225	1.42237	1.7	0.70167	0.98693	6.7	1.91455	1.40778
1.8	0.71732	1.05500	6.8	1.92677	1.42453	1.8	0.74244	1.01363	6.8	1.92900	1.41014
1.9	0.75916	1.07855	6.9	1.94109	1.42663	1.9	0.78228	1.03824	6.9	1.94326	1.41244
2.0	0.79983	1.10020	7.0	1.95521	1.42866	2.0	0.82115	1.06096	7.0	1.95731	1.41467
2.1	0.83935	1.12015	7.1	1.96914	1.43065	2.1	0.85905	1.08197	7.1	1.97118	1.41684
2.2	0.87772	1.13857	7.2	1.98287	1.43257	2.2	0.89597	1.10144	7.2	1.98487	1.41895
2.3	0.91499	1.15563	7.3	1.99643	1.43445	2.3	0.93193	1.11953	7.3	1.99837	1.42101
2.4	0.95118	1.17146	7.4	2.00981	1.43628	2.4	0.96694	1.13635	7.4	2.01169	1.42301
2.5	0.98634	1.18618	7.5	2.02301	1.43805	2.5	1.00102	1.15204	7.5	2.02485	1.42496
2.6	1.02050	1.19990	7.6	2.03604	1.43978	2.6	1.03421	1.16668	7.6	2.03784	1.42686
2.7	1.05370	1.21271	7.7	2.04891	1.44147	2.7	1.06653	1.18039	7.7	2.05066	1.42871
2.8	1.08598	1.22469	7.8	2.06162	1.44312	2.8	1.09801	1.19324	7.8	2.06332	1.43051
2.9	1.11738	1.23592	7.9	2.07417	1.44472	2.9	1.12867	1.20530	7.9	2.07583	1.43227
3.0	1.14794	1.24647	8.0	2.08657	1.44628	3.0	1.15856	1.21664	8.0	2.08819	1.43398
3.1	1.17769	1.25639	8.1	2.09882	1.44781	3.1	1.18770	1.22733	8.1	2.10040	1.43565
3.2	1.20667	1.26574	8.2	2.11092	1.44930	3.2	1.21611	1.23741	8.2	2.11246	1.43728
3.3	1.23491	1.27457	8.3	2.12288	1.45075	3.3	1.24383	1.24693	8.3	2.12439	1.43888
3.4	1.26245	1.28290	8.4	2.13470	1.45217	3.4	1.27089	1.25594	8.4	2.13617	1.44043
3.5	1.28931	1.29080	8.5	2.14638	1.45355	3.5	1.29731	1.26448	8.5	2.14782	1.44195
3.6	1.31552	1.29828	8.6	2.15794	1.45491	3.6	1.32311	1.27257	8.6	2.15934	1.44344
3.7	1.34112	1.30537	8.7	2.16936	1.45623	3.7	1.34833	1.28026	8.7	2.17073	1.44489
3.8	1.36612	1.31212	8.8	2.18065	1.45753	3.8	1.37297	1.28757	8.8	2.18199	1.44631
3.9	1.39055	1.31853	8.9	2.19182	1.45879	3.9	1.39707	1.29454	8.9	2.19313	1.44770
4.0	1.41443	1.32464	9.0	2.20286	1.46003	4.0	1.42065	1.30117	9.0	2.20415	1.44905
4.1	1.43779	1.33047	9.1	2.21379	1.46124	4.1	1.44373	1.30750	9.1	2.21504	1.45038
4.2	1.46065	1.33603	9.2	2.22460	1.46242	4.2	1.46632	1.31354	9.2	2.22583	1.45168
4.3	1.48302	1.34134	9.3	2.23530	1.46358	4.3	1.48844	1.31932	9.3	2.23650	1.45295
4.4	1.50493	1.34642	9.4	2.24588	1.46471	4.4	1.51012	1.32485	9.4	2.24706	1.45420
4.5	1.52639	1.35128	9.5	2.25635	1.46582	4.5	1.53136	1.33014	9.5	2.25751	1.45542
4.6	1.54742	1.35594	9.6	2.26672	1.46691	4.6	1.55219	1.33522	9.6	2.26785	1.45661
4.7	1.56804	1.36041	9.7	2.27698	1.46798	4.7	1.57262	1.34009	9.7	2.27809	1.45778
4.8	1.58826	1.36470	9.8	2.28714	1.46902	4.8	1.59265	1.34476	9.8	2.28822	1.45892
4.9	1.60810	1.36882	9.9	2.29720	1.47004	4.9	1.61232	1.34925	9.9	2.29826	1.46005
5.0	1.62756	1.37278	10.0	2.30716	1.47105	5.0	1.63162	1.35357	10.0	2.30820	1.46115
	$\begin{bmatrix} (-3)1 \\ 4 \end{bmatrix}$	$\begin{bmatrix} (-4)7 \\ 4 \end{bmatrix}$		$\begin{bmatrix} (-5)4 \\ 3 \end{bmatrix}$	$\begin{bmatrix} (-5)2 \\ 3 \end{bmatrix}$		$\begin{bmatrix} (-4)9 \\ 4 \end{bmatrix}$	$\begin{bmatrix} (-4)6 \\ 4 \end{bmatrix}$		$\begin{bmatrix} (-5)4 \\ 3 \end{bmatrix}$	$\begin{bmatrix} (-5)2 \\ 3 \end{bmatrix}$

$$\Im \psi(1.5 + iy) = \frac{1}{2}\pi \tanh \pi y - \frac{4y}{4y^2 + 1}$$