

ELLIPTIC INTEGRAL OF THE THIRD KIND $\Pi(n; \varphi|\alpha)$

Table 17.9

$$\Pi(n; \varphi|\alpha) = \int_0^\varphi (1 - n \sin^2 \theta)^{-1} [1 - \sin^2 \alpha \sin^2 \theta]^{-\frac{1}{2}} d\theta$$

n	$\alpha \setminus \varphi$	0°	15°	30°	45°	60°	75°	90°
0.0	0°	0	0.26180	0.52360	0.78540	1.04720	1.30900	1.57080
0.0	15	0	0.26200	0.52513	0.79025	1.05774	1.32733	1.59814
0.0	30	0	0.26254	0.52943	0.80437	1.08955	1.38457	1.68575
0.0	45	0	0.26330	0.53562	0.82602	1.14243	1.48788	1.85407
0.0	60	0	0.26406	0.54223	0.85122	1.21260	1.64918	2.15651
0.0	75	0	0.26463	0.54736	0.87270	1.28371	1.87145	2.76806
0.0	90	0	0.26484	0.54931	0.88137	1.31696	2.02759	∞
0.1	0	0	0.26239	0.52820	0.80013	1.07949	1.36560	1.65576
0.1	15	0	0.26259	0.52975	0.80514	1.09058	1.38520	1.68536
0.1	30	0	0.26314	0.53412	0.81972	1.12405	1.44649	1.78030
0.1	45	0	0.26390	0.54041	0.84210	1.17980	1.55739	1.96326
0.1	60	0	0.26467	0.54712	0.86817	1.25393	1.73121	2.29355
0.1	75	0	0.26524	0.55234	0.89040	1.32926	1.97204	2.96601
0.1	90	0	0.26545	0.55431	0.89939	1.36454	2.14201	∞
0.2	0	0	0.26299	0.53294	0.81586	1.11534	1.43078	1.75620
0.2	15	0	0.26319	0.53452	0.82104	1.12705	1.45187	1.78850
0.2	30	0	0.26374	0.53896	0.83612	1.16241	1.51792	1.89229
0.2	45	0	0.26450	0.54535	0.85928	1.22139	1.63775	2.09296
0.2	60	0	0.26527	0.55217	0.88629	1.30003	1.82643	2.45715
0.2	75	0	0.26585	0.55747	0.90934	1.38016	2.08942	3.20448
0.2	90	0	0.26606	0.55948	0.91867	1.41777	2.27604	∞
0.3	0	0	0.26359	0.53784	0.83271	1.15551	1.50701	1.87746
0.3	15	0	0.26379	0.53945	0.83808	1.16791	1.52988	1.91309
0.3	30	0	0.26434	0.54396	0.85370	1.20543	1.60161	2.02779
0.3	45	0	0.26511	0.55046	0.87771	1.26812	1.73217	2.25038
0.3	60	0	0.26588	0.55739	0.90574	1.35193	1.93879	2.65684
0.3	75	0	0.26646	0.56278	0.92969	1.43759	2.22876	3.49853
0.3	90	0	0.26667	0.56483	0.93938	1.47789	2.43581	∞
0.4	0	0	0.26420	0.54291	0.85084	1.20098	1.59794	2.02789
0.4	15	0	0.26440	0.54454	0.85641	1.21419	1.62298	2.06774
0.4	30	0	0.26495	0.54912	0.87262	1.25419	1.70165	2.19629
0.4	45	0	0.26572	0.55573	0.89756	1.32117	1.84537	2.44683
0.4	60	0	0.26650	0.56278	0.92670	1.41098	2.07413	2.90761
0.4	75	0	0.26708	0.56827	0.95162	1.50309	2.39775	3.87214
0.4	90	0	0.26729	0.57035	0.96171	1.54653	2.63052	∞
0.5	0	0	0.26481	0.54814	0.87042	1.25310	1.70919	2.22144
0.5	15	0	0.26501	0.54980	0.87621	1.26726	1.73695	2.26685
0.5	30	0	0.26557	0.55447	0.89307	1.31017	1.82433	2.41367
0.5	45	0	0.26634	0.56119	0.91902	1.38218	1.98464	2.70129
0.5	60	0	0.26712	0.56837	0.94939	1.47906	2.24155	3.23477
0.5	75	0	0.26770	0.57394	0.97538	1.57881	2.60846	4.36620
0.5	90	0	0.26792	0.57606	0.98591	1.62599	2.87468	∞
0.6	0	0	0.26543	0.55357	0.89167	1.31379	1.85002	2.48365
0.6	15	0	0.26563	0.55525	0.89770	1.32907	1.88131	2.53677
0.6	30	0	0.26619	0.56000	0.91527	1.37544	1.98005	2.70905
0.6	45	0	0.26696	0.56684	0.94235	1.45347	2.16210	3.04862
0.6	60	0	0.26775	0.57414	0.97406	1.55884	2.45623	3.68509
0.6	75	0	0.26833	0.57982	1.00123	1.66780	2.88113	5.05734
0.6	90	0	0.26855	0.58198	1.01225	1.71951	3.19278	∞
			$\left[\begin{smallmatrix} (-5)5 \\ 4 \end{smallmatrix} \right]$	$\left[\begin{smallmatrix} (-4)4 \\ 6 \end{smallmatrix} \right]$	$\left[\begin{smallmatrix} (-3)2 \\ 7 \end{smallmatrix} \right]$	$\left[\begin{smallmatrix} (-3)7 \\ 7 \end{smallmatrix} \right]$		

See Examples 15-20.