

digits of precision	16	32	64	128	256	512	1024	2048
$n$ for $\theta = 1^\circ$	3	6	12	22	41	76	$\geq 100$	
$n$ for $\theta = 1^\circ$ alt.	3	6	12	24	43	79	$\geq 100$	
$n$ for $\theta = 45^\circ$ alt.	3	5	10	18	32	58	$\geq 100$	
$n$ for $\theta = 76^\circ$ alt.	2	5	9	16	29	53	95	$\geq 100$