

Table “3 in 1”

Rational approximations of  $\tan$ ,  $\cot$ ,  $\sin$ ,  $\cos$

Reminder:  $\tan(90^\circ - n^\circ) = \cot n^\circ = \frac{1}{\tan n^\circ}$ ,  $\cos n^\circ = \sin(90^\circ - n^\circ)$

tan n° ≈ p/q			n°	sin n° ≈ p/q			n°	sin n° ≈ p/q		
q<50	q<100	q<1000		q<50	q<100	q<1000		q<50	q<100	q<1000
1/49	1/57	17/974	1°	1/49	1/57	10/573	46°	23/32	41/57	305/424
1/29	3/86	11/315	2°	1/29	3/86	26/745	47°	30/41	49/67	716/979
1/19	1/19	37/706	3°	1/19	5/96	28/535	48°	26/35	55/74	515/693
3/43	3/43	10/143	4°	3/43	3/43	3/43	49°	37/49	40/53	40/53
2/23	7/80	86/983	5°	2/23	2/23	19/218	50°	36/47	36/47	370/483
2/19	2/19	35/333	6°	5/48	7/67	30/287	51°	7/9	73/94	136/175
6/49	7/57	97/790	7°	5/41	5/41	73/599	52°	26/33	26/33	539/684
6/43	9/64	26/185	8°	5/36	11/79	27/194	53°	4/5	79/99	234/293
3/19	13/82	51/322	9°	5/32	5/32	79/505	54°	38/47	72/89	682/843
3/17	3/17	143/811	10°	4/23	17/98	170/979	55°	9/11	77/94	77/94
7/36	7/36	83/427	11°	4/21	17/89	137/718	56°	34/41	63/76	611/737
10/47	17/80	193/908	12°	5/24	16/77	205/986	57°	26/31	26/31	681/812
3/13	3/13	178/771	13°	9/40	9/40	119/529	58°	39/46	67/79	413/487
1/4	1/4	93/373	14°	8/33	15/62	232/959	59°	6/7	6/7	6/7
11/41	26/97	209/780	15°	7/27	22/85	22/85	60°	13/15	84/97	808/933
2/7	27/94	119/415	16°	8/29	27/98	250/907	61°	7/8	7/8	865/989
11/36	26/85	48/157	17°	12/41	19/65	69/236	62°	15/17	83/94	611/692
13/40	13/40	103/317	18°	13/42	17/55	305/987	63°	41/46	49/55	842/945
10/29	21/61	261/758	19°	14/43	14/43	321/986	64°	44/49	71/79	373/415
4/11	4/11	99/272	20°	13/38	13/38	105/307	65°	29/32	29/32	503/555
5/13	38/99	157/409	21°	14/39	19/53	167/466	66°	21/23	74/81	317/347
19/47	40/99	301/745	22°	3/8	3/8	357/953	67°	23/25	81/88	799/868
14/33	31/73	222/523	23°	16/41	34/87	59/151	68°	38/41	51/55	191/206
4/9	41/92	126/283	24°	13/32	24/59	157/386	69°	14/15	14/15	253/271
7/15	7/15	173/371	25°	19/45	41/97	71/168	70°	31/33	78/83	857/912
20/41	20/41	338/693	26°	18/41	32/73	409/933	71°	35/37	52/55	538/569
25/49	27/53	107/210	27°	5/11	44/97	74/163	72°	39/41	39/41	855/899
25/47	42/79	109/205	28°	23/49	23/49	346/737	73°	22/23	22/23	766/801
26/47	51/92	148/267	29°	16/33	16/33	383/790	74°	25/26	74/77	670/697
15/26	56/97	571/989	30°	1/2	1/2	1/2	75°	28/29	85/88	652/675
3/5	3/5	140/233	31°	17/33	17/33	137/266	76°	33/34	65/67	98/101
5/8	5/8	598/957	32°	9/17	44/83	487/919	77°	38/39	38/39	38/39
13/20	50/77	439/676	33°	6/11	49/90	61/112	78°	45/46	45/46	940/961
29/43	29/43	172/255	34°	19/34	52/93	222/397	79°	48/49	53/54	374/381
7/10	7/10	675/964	35°	27/47	39/68	534/931	80°	48/49	65/66	713/724
8/11	69/95	271/373	36°	10/17	57/97	77/131	81°	48/49	80/81	722/731
37/49	52/69	159/211	37°	3/5	59/98	597/992	82°	1	98/99	407/411
25/32	25/32	693/887	38°	8/13	8/13	511/830	83°	1	98/99	799/805
17/21	17/21	149/184	39°	17/27	56/89	528/839	84°	1	98/99	363/365
26/31	73/87	485/578	40°	9/14	9/14	637/991	85°	1	1	785/788
20/23	73/84	818/941	41°	21/32	61/93	536/817	86°	1	1	819/821
9/10	9/10	669/743	42°	2/3	65/97	362/541	87°	1	1	729/730
41/44	83/89	152/163	43°	15/22	15/22	519/761	88°	1	1	998/999
28/29	28/29	957/991	44°	25/36	66/95	91/131	89°	1	1	1
1	1	1	45°	29/41	70/99	577/816	90°	1	1	1