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values of $\frac{F_n}{F_{n-1}}$ for $1 < n < 26$

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The golden ratio ϕ is an irrational number, approximately 1.6180339887498948482045868. Dividing one Fibonacci number by the previous gives better and better approximations to the golden ratio the bigger the numbers get. One division gets a little under, then the next a little over, as the table below shows. 144 divided by 89 is probably good enough for most practical purposes.

F_n	F_{n-1}	$\frac{F_n}{F_{n-1}}$ to 20 decimal places	Approximation error
1	1	1.00000000000000000000	-0.61803398874989484820
2	1	2.00000000000000000000	0.38196601125010515179
3	2	1.50000000000000000000	-0.11803398874989484820
5	3	1.66666666666666666666	0.04863267791677181846
8	5	1.60000000000000000000	-0.01803398874989484820
13	8	1.62500000000000000000	0.00696601125010515179
21	13	1.61538461538461538461	-0.00264937336527946358
34	21	1.61904761904761904761	0.00101363029772419941
55	34	1.61764705882352941176	-0.00038692992636543643
89	55	1.61818181818181818181	0.00014782943192333361
144	89	1.61797752808988764044	-0.00005646066000720775
233	144	1.61805555555555555555	0.00002156680566070735
377	233	1.61802575107296137339	-0.00000823767693347481
610	377	1.61803713527851458885	0.00000314652861974065
987	610	1.61803278688524590163	-1.20186464894656524257
1597	987	1.61803444782168186423	0.00000045907178701603
2584	1597	1.61803381340012523481	-0.00000017534976961338
4181	2584	1.61803405572755417956	0.00000066977659331361
6765	4181	1.61803396316670652953	-0.00000002558318831866
10946	6765	1.61803399852180339985	0.00000000977190855164
17711	10946	1.61803398501735793897	-0.00000000373253690923
28657	17711	1.61803399017559708655	0.00000000142570223835
46368	28657	1.61803398820532505147	-0.00000000054456979673
75025	46368	1.61803398895790200138	0.00000000020800715317