Illustration of Euler's Identity:

$$e^{i\pi} + 1 = 0$$

e =	$\lim_{n\to\infty} (1 + 1/n)^n$ =	2.71828		
e^x =	$\lim_{n\to\infty} (1 + x/n)^n$ =	$\lim_{n\to\infty} [(1 + 1/n)^n]^x$	←	(someone please explain why this is)
$e^{i\pi}$ =	$\lim_{n\to\infty} (1 + i\pi/n)^n$			

n	$(1 + i\pi / n)^n$	Complex Result	Real Part	Imaginary Part
1	$(1 + i\pi / 1)^1$ =	1.00000 + i * 3.14159	+1.00000	3.14159
2	$(1 + i\pi / 2)^2$ =	-1.46740 + i * 3.14159	-1.46740	3.14159
3	$(1 + i\pi / 3)^3$ =	-2.28987 + i * 1.99321	-2.28987	1.99321
4	$(1 + i\pi / 4)^4$ =	-2.32060 + i * 1.20370	-2.32060	1.20370
5	$(1 + i\pi / 5)^5$ =	-2.16857 + i * 0.75902	-2.16857	0.75902
6	$(1 + i\pi / 6)^6$ =	-2.00552 + i * 0.50677	-2.00552	0.50677
7	$(1 + i\pi / 7)^7$ =	-1.86707 + i * 0.35638	-1.86707	0.35638
8	$(1 + i\pi / 8)^8$ =	-1.75537 + i * 0.26174	-1.75537	0.26174
9	$(1 + i\pi / 9)^9$ =	-1.66578 + i * 0.19919	-1.66578	0.19919
10	$(1 + i\pi / 10)^{10}$ =	-1.59336 + i * 0.15606	-1.59336	0.15606
100	$(1 + i\pi / 100)^{100}$ =	-1.05056 + i * 0.00109	-1.05056	0.00109
1,000	$(1 + i\pi / 1{,}000)^{1{,}000}$ =	-1.00495 + i * 1.03865 E-5	-1.00495	1.03865 E-5
10,000	$(1 + i\pi / 10{,}000)^{10{,}000}$ =	-1.00049 + i * 1.03405 E-7	-1.00049	1.03405 E-7
100,000	$(1 + i\pi / 100{,}000)^{100{,}000}$ =	-1.00005 + i * 1.03359 E-9	-1.00005	1.03359 E-9
210,690	$(1 + i\pi / 210{,}690)^{210{,}690}$ =	-1.00002 + i * 2.32836 E-10	-1.00002	2.32836 E-10
210,691	$(1 + i\pi / 210{,}691)^{210{,}691}$ =	-1.00002 + i * 0	-1.00002	0
1,000,000	$(1 + i\pi / 1{,}000{,}000)^{1{,}000{,}000}$ =	-1.00000 + i * 0	-1	0
$n\to\infty$	**$(1 + i\pi / n)^n$ =**	**-1.00000 + i * 0**	**-1**	**0**

$$e^{i\pi} = \lim_{n\to\infty} (1 + i\pi / n)^n = -1$$

$$e^{i\pi} = -1$$

$$e^{i\pi} + 1 = 0$$