

The Magic Penny Challenge!

Would you rather have \$1,000,000 TODAY or a penny that **DOUBLES** every day for 30 days?

DAY	PENNY MATH ($0.01 \times 2^{n-1}$)	PENNY TOTAL	\$1 MILLION BANK*	WHO'S WINNING?
Day 1	$0.01 \times 2^0 = 0.01 \times 1$	\$0.01	\$1,000,136.99	\$1 Million
Day 2	$0.01 \times 2^1 = 0.01 \times 2$	\$0.02	\$1,000,273.99	\$1 Million
Day 3	$0.01 \times 2^2 = 0.01 \times 4$	\$0.04	\$1,000,411.02	\$1 Million
Day 4	$0.01 \times 2^3 = 0.01 \times 8$	\$0.08	\$1,000,548.06	\$1 Million
Day 5	$0.01 \times 2^4 = 0.01 \times 16$	\$0.16	\$1,000,685.12	\$1 Million
Day 6	$0.01 \times 2^5 = 0.01 \times 32$	\$0.32	\$1,000,822.20	\$1 Million
Day 7	$0.01 \times 2^6 = 0.01 \times 64$	\$0.64	\$1,000,959.30	\$1 Million
Day 8	$0.01 \times 2^7 = 0.01 \times 128$	\$1.28	\$1,001,096.42	\$1 Million
Day 9	$0.01 \times 2^8 = 0.01 \times 256$	\$2.56	\$1,001,233.55	\$1 Million
Day 10	$0.01 \times 2^9 = 0.01 \times 512$	\$5.12	\$1,001,370.71	\$1 Million
Day 11	$0.01 \times 2^{10} = 0.01 \times 1K$	\$10.24	\$1,001,507.88	\$1 Million
Day 12	$0.01 \times 2^{11} = 0.01 \times 2K$	\$20.48	\$1,001,645.07	\$1 Million
Day 13	$0.01 \times 2^{12} = 0.01 \times 4K$	\$40.96	\$1,001,782.29	\$1 Million
Day 14	$0.01 \times 2^{13} = 0.01 \times 8K$	\$81.92	\$1,001,919.52	\$1 Million
Day 15	$0.01 \times 2^{14} = 0.01 \times 16K$	\$163.84	\$1,002,056.77	\$1 Million
Day 16	$0.01 \times 2^{15} = 0.01 \times 32K$	\$327.68	\$1,002,194.03	\$1 Million
Day 17	$0.01 \times 2^{16} = 0.01 \times 65K$	\$655.36	\$1,002,331.32	\$1 Million
Day 18	$0.01 \times 2^{17} = 0.01 \times 131K$	\$1,310.72	\$1,002,468.63	\$1 Million
Day 19	$0.01 \times 2^{18} = 0.01 \times 262K$	\$2,621.44	\$1,002,605.95	\$1 Million
Day 20	$0.01 \times 2^{19} = 0.01 \times 524K$	\$5,242.88	\$1,002,743.29	\$1 Million
Day 21	$0.01 \times 2^{20} = 0.01 \times 1.0M$	\$10,485.76	\$1,002,880.66	\$1 Million
Day 22	$0.01 \times 2^{21} = 0.01 \times 2.1M$	\$20,971.52	\$1,003,018.04	\$1 Million
Day 23	$0.01 \times 2^{22} = 0.01 \times 4.2M$	\$41,943.04	\$1,003,155.44	\$1 Million
Day 24	$0.01 \times 2^{23} = 0.01 \times 8.4M$	\$83,886.08	\$1,003,292.86	\$1 Million
Day 25	$0.01 \times 2^{24} = 0.01 \times 16.8M$	\$167,772.16	\$1,003,430.29	\$1 Million
Day 26	$0.01 \times 2^{25} = 0.01 \times 33.6M$	\$335,544.32	\$1,003,567.75	\$1 Million
Day 27	$0.01 \times 2^{26} = 0.01 \times 67.1M$	\$671,088.64	\$1,003,705.22	\$1 Million
Day 28	$0.01 \times 2^{27} = 0.01 \times 134.2M$	\$1,342,177.28	\$1,003,842.72	** PENNY LEADS! **
Day 29	$0.01 \times 2^{28} = 0.01 \times 268.4M$	\$2,684,354.56	\$1,003,980.23	PENNY!
Day 30	$0.01 \times 2^{29} = 0.01 \times 536.9M$	\$5,368,709.12	\$1,004,117.76	PENNY!

THINK ABOUT IT:

Day 1: the penny is worth just \$0.01.
Day 30: it grows to \$5,368,709.12!

KEY FORMULAS:

Penny: $\$0.01 \times 2$ raised to (day - 1)
 Bank: $\$1M \times (1 + 0.05/365)^{\text{day}}$

THE CROSSOVER: DAY 28

The penny overtakes \$1 Million for the first time on Day 28!