

# Step 1: Change Your Life With One Calculation

## Description

If there were an eighth wonder of the world, we'd nominate the equation for compound interest: Your money  $\times (1 + i)^n$ . (If you're not a math geek, don't worry; we're going to decipher that for you.)

Albert Einstein called this deceptively simple formula the eighth wonder of the world and went on to say "he who understands, earns it...he who doesn't, pays it" We call it your ticket to financial independence.

That's right, just three straightforward inputs can change your life: the amount of money you invest; the rate of return you get; and how much time you have to let your money grow.

## Hate math but like money? Read on.

Since words cannot adequately describe the magical nature of compound interest, let's try a few visuals.

Here's how a single \$1,200 investment grows over time in three savings scenarios.

## How a single \$1,200 investment grows

	2%	5%	9%*
Initial investment	\$1,200	\$1,200	\$1,200
5 years	\$1,325	\$1,532	\$1,846
10 years	\$1,463	\$1,955	\$2,841
15 years	\$1,615	\$2,495	\$4,371
25 years	\$1,969	\$4,064	\$10,348
30 years	\$2,174	\$5,186	\$15,921
35 years	\$2,400	\$6,619	\$24,497
40 years	\$2,650	\$8,448	\$37,691

*\*Based on the stock market's historical rate of return.*

As you can see, simply socking away one lump sum and leaving it put could turn \$1,200 into nearly \$40,000 over 40 years. Not only have you earned interest, but you've earned interest on your interest. And all you had to do was invest your first paycheck.

That said, let's be honest: \$37,691 ain't what it used to be. So let's make one small revision and invest \$1,200 every year. Behold compound interest in a mildly caffeinated state.

## A more compelling table than the previous one

	2%	5%	9%
Initial investment	\$1,200	\$1,200	\$1,200
5 years	\$7,695	\$8,494	\$9,674
10 years	\$14,865	\$17,803	\$22,713
15 years	\$22,782	\$29,684	\$42,775
25 years	\$41,174	\$64,200	\$121,136
30 years	\$51,829	\$88,899	\$194,211
35 years	\$63,593	\$120,423	\$306,646
40 years	\$76,582	\$160,656	\$479,642

Now we're at half a million. Not bad, right? Still, we think you can top it. In fact, it's not a stretch to get near that magical \$1 million milestone. Just save \$2,500 a year (a mere \$208 a month), and at 9% you've got a million dollars in 40 years. Or stick with the \$1,200 annual contribution but improve your investing skills (which the rest of this series will show you how to do). If you are able to best the stock market's average annual returns by a mere 3 percentage points, the \$1 million prize is yours.

And, the best part about compound interest is that it works the same for everyone, whether you have \$20 to invest or \$200,000. Go ahead, tinker with this [compounding calculator](#) to see what we mean. If you don't believe you can become a millionaire with just the resources you have right now, keep reading.

## The amazing tale of the Mississippi washer woman

Oseola McCarty was born in Mississippi in 1908. For nearly 75 years, she lived in the same simple house, washing other people's clothes for a living and putting whatever money she could into savings accounts at the local bank.

In the summer of 1995, Oseola made local and then national headlines when she donated \$150,000 to the University of Southern Mississippi to establish a scholarship fund. "I just figured the money would do [scholarship recipients] a lot more good than it would me," she said. It soon came out that this washer woman had managed to amass nearly *one quarter of a million dollars* over her lifetime.

Time — a key part of the compounding equation — helped turn her meager early investments into hundreds of thousands of dollars.

## We like this ending better

As remarkable as the Oseola McCarty story is, the ending could have been a blockbuster. After she died in 1999, one of her bankers wrote to us saying: "Time was able to turn even the modest returns of her early investments into hundreds of thousands of dollars. If we had been able to introduce her to equities earlier, she would have left millions instead of thousands."

Remember, the amount you save and your time horizon — how long you have until you need the money you've invested — are only two-thirds of the compounding equation. Oseola excelled in both.

But she did pay a price for ignoring the rate of return on her investments.

Typically, the more risk you are willing to take on (by, say, investing in stocks rather than bonds), the higher your potential return. But risk is a four-letter word to a lot of folks: They're happy to settle for lesser returns to avoid it.

Bad idea. Stuffing all your savings into the Serta — or sticking only with “risk free” investments like Government of Canada T-bills or bonds — *can be disastrous*. In today's low rate environment, most Government debt is not even keeping up with the rate of inflation. What this means is that even though it may seem as though you are being paid 2% or so per annum (*nominal* return) for holding a 10 year Government of Canada bond, if inflation over the next 10 years averages more than 2%, your *real* return is in fact going to be negative if you hold on to maturity.

If you stuff all of your savings into a “safe” Government bond, there is a chance that when it matures, you will actually have less purchasing power than what you had to begin with. Such is the power of inflation and it is a very important variable to keep in mind. We Fools believe the best place for your long-term (key word ... as you'll discover in [Step 4](#)) savings is the stock market and its proven ability to beat inflation over long periods of time.

## Your golden ticket to financial independence

It seems too easy to be true, but financial independence is just three variables away. The key is to start saving now (as much as you can), and invest it well. The sooner you get the wonder of compounding working for you, the sooner you'll reach your financial dreams.

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#### Date

2025/06/27

#### Date Created

2012/12/21

#### Author

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