

The Power of Compound Interest

1. Check out [this video](#) that explains the importance of compounding interest vs. simple interest.
2. In your own words, explain what compound interest is, and how it can work to your advantage in your future investments:

For the 3 scenarios listed below you will be using this [Basic Compound Interest Calculator](#). Assume all figures will be compounded monthly.

Meet John, 22 years old, a recent college graduate who is eager to get started on his retirement savings. He plans to open a Roth IRA account with an initial investment of \$2,000. He will make \$100 contributions monthly over the next 40 years (investment time span). His financial advisor has informed him that his account should make about a 6% rate of return and will be compounded monthly.

3. According to these calculations, what will his future balance be?
4. If he increased his monthly contributions to \$200, what would this raise his ending balance to?
5. If he increased his monthly contributions to the maximum monthly amount allowed in a Roth IRA, or \$500, what would his ending balance be?
6. What if John would have made an initial investment of \$5,000 with \$100 monthly contributions over 40 years with a rate of return of 8%?
7. What if John had a drastic turn of events in his life and was able to make NO contributions to his retirement account after this initial \$5,000 investment at 8%? How much would his money grow to become over 40 years?

Toby's parents always stressed the importance of saving for retirement at a young age. So, at the age of **16** when Toby started working he opened a Roth IRA account with the help of his parents. Toby had saved \$2,500 as his initial investment while working over the summer to open his Roth IRA. Toby's goal is to retire at age 66, so his money will have an investment time span of 50 years.

8. Toby's goal is to max out his IRA contributions each month. So, he will make \$500 monthly contributions while working his part time job after school and on weekends. How much money does Toby have the potential to accumulate if his rate of return was 7%?

9. Toby realized once he started investing that it was not feasible for him to make the \$500 payments. He has decided to cut those contributions in half, investing \$250 per month in contributions while keeping his rate of return at 7%. What would this bring his total to?

10. Despite having a well thought out plan for his life at 16 years old, when Toby turned 60 he realized he wanted to go ahead and stop investing in his retirement. This would drop his investment time span to 44 years. He did, however, manage to make \$300 per month contributions on his initial investment of \$2,500 at a whopping 10% rate of return. How much would he retire with under these circumstances?

Denise didn't begin her retirement savings until a bit later in life. Having just turned 38, she is feeling the pressure of beginning her retirement savings. She and her husband plan to retire at age 60, leaving her with a 22 year investment time span. They haven't been too wise with their money and only have an initial deposit of \$100. Due to excessive car payments and not living within their means, they can only afford to contribute \$100 per month. Her financial advisor has indicated she can expect a 6.5% rate of return.

11. Under the conditions listed above, how much would Denise have in her retirement account at age 60?

12. After seeing how little she was able to accrue under those circumstances, she decided to up her monthly contributions to \$200. What did this change her future balance to?

13. What if Denise pushed her retirement age back another 5 years, leaving her money 27 years to grow? Assume she still made the initial contribution of \$100 with \$100 monthly contributions at 6.5% rate of return. How much would her money have grown to?

14. After reading these 3 different scenarios of saving for retirement using compound interest, what are some of your thoughts and takeaways?

15. Why is it important to get started saving for retirement at a young age?

16. What are some ways you could start saving money, or things you could do to make money?