

3.12: Exercises

? Exercise 3.12.1

Explain why \$1 received today is worth more than \$1 received one year from today.

Answer

\$1 received today is worth more than \$1 received one year from today because as soon as we have the money we can start making it work for us earning a positive rate of return. If I earn 5% interest, then having the \$1 today means I get an extra 5 cents. The earlier I get the money, the more time I have to make it work in my favor.

? Exercise 3.12.2

What do we mean when we refer to an annuity? How is an annuity different from an annuity due?

Answer

An annuity refers to an equal periodic cash flow stream. While the equal cash flows arrive at the END of each period for an annuity, they arrive at the BEGINNING of each period for an annuity due.

? Exercise 3.12.3

What is the relationship between present value and future value?

Answer

Present Value and Future values are just flip sides of the same coin. Present value tells us what the cash flow is worth to us today while future value tells us what the cash flow will grow to over time. Once we have one, we can find the other.

? Exercise 3.12.4

How do we determine the appropriate discount rate to use when finding present value?

Answer

The appropriate discount rate to use when finding present value is the rate of return we can earn on other investments of similar risk. The idea of present value is that it tells us how much a future cash flow is worth to us today. The value of this future cash flow is exactly equal to what we would have to invest today to duplicate it. However, we need to control for risk. Riskier cash flows should be discounted at a higher rate because they are worth less to us. Note that the appropriate discount may change over time as market rates of interest change over time. This will play a large part in our valuation chapters starting with Chapter 6 on bond valuation.

? Exercise 3.12.5

Why is compounding on a monthly basis better for us than compounding on an annual basis?

Answer

Compounding on a monthly basis is better than annual because it allows us to start earning interest on interest sooner. Not only does the principle work for us, but so does the interest.

Reminder for calculation exercises: When using the 5-key approach with the TI-BAIL+ , you must press CPT and then what you want to solve – for instance in Problem 1a, your last step would be CPT FV. With the HP, you just press what you want to solve – for instance in Problem 1a, your last step would be FV. With the TI-83/84 move the cursor to highlight the variable you want to find and then press SOLVE.

3.12: Exercises is shared under a [not declared](#) license and was authored, remixed, and/or curated by LibreTexts.