# Module: Time Value of Money

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### Topics

This module includes the following five topics:

Topic 1: Future Value and Compounding

Topic 2: Present Value and Discounting

Topic 3: Annuities and Perpetuities

Topic 4: Time Value of Money in Commercial Lending

Topic 5: Present and Future Value Formulas

## Topic 1: Future Value and Compounding

This topic reviews how to compute the future value of a single payment with simple and compound interest.

### Readings

Introduction, Section 1.1

### Learning **Problems**

Future Value at Hamilton

Future Value at Sproule

APR versus EAR at Tyson

**Answer Keys**

Future Value at Hamilton

Future Value at Sproule

APR versus EAR at Tyson

## Topic 2: Present Value and Discounting

This topic reviews how to compute the present value of a single payment with simple and compound interest.

### Readings

Section 1.2

### **Learning Problems**

Present Value at Tribeca

Present Value at Sol

**Answer Keys**

Present Value at Tribeca

Present Value at Sol

## Topic 3: Annuities and Perpetuities

This topic reviews how to compute the present and future value of a string of equal payments with and without growth.

### Readings

### Sections 1.3 and 1.4

### Learning **Problems**

Future Value of an Annuity at Cartlidge

Present Value of an Annuity at Edwards

Present Value of an Annuity at Wellington

Present Value of an Annuity at Wilson

Present Value of an Annuity at Harte

Present Value of a Perpetuity at Wexler

Present Value of a Perpetuity with Growth at Jenkins

Present Value of an Annuity with Growth at Harrison

**Answer Keys**

Future Value of an Annuity at Cartlidge

Present Value of an Annuity at Edwards

Present Value of an Annuity at Wellington

Present Value of an Annuity at Wilson

Present Value of an Annuity at Harte

Present Value of a Perpetuity at Wexler

Present Value of a Perpetuity with Growth at Jenkins

Present Value of an Annuity with Growth at Harrison

## Topic 4: Time Value of Money in Commercial Lending

This topic studies how to calculate different types of commercial loan payments.

### Readings

Section 1.5

### **Learning Problems**

Blended, Equal Monthly Loan Payment at Jones

Interest Rate at Wilson

Number of Payments at Allison

Customized Loan Schedule at Hastings

Time Value of Money Applications

**Answer Keys**

Blended, Equal Monthly Loan Payment at Jones

Interest Rate at Wilson

Number of Payments at Allison

Customized Loan Schedule at Hastings

Time Value of Money Applications

## Topic 5: Present and Future Values Formulas and Functions

This topic examines how to derive the different present and future value formulas and how to use the predefined present and future value functions available in Excel.

### Readings

Section 1.6 and 1.7

### **Learning Problems**

Predefined FV and PV Functions in Excel

Blended, Equal Monthly Loan Payments at Flynn

**Answer Keys**

Predefined FV and PV Functions in Excel

Blended, Equal Monthly Loan Payments at Flynn

## Module Summary

In this module, you learned how to incorporate the time value of money in management decision making.