



Business Finance Fall 2012

Course Information

Course Number: FIN 357

Times: TH 2:00 (03415) UTC 4.132

Instructor Information

Instructor: J. David Miller

Office: GSB 5.124D

Office Hrs: Tuesday & Thursday 12:30 to 2:00

E-mail: David.Miller@mcombs.utexas.edu

Prerequisites: ACC 312, STA 309, ECO 304K, 304L, and credit or registration for BA 324

Textbook: **Corporate Finance: Core Principles and Applications, Third Edition**, Ross, Westerfield, Jaffe, Jordan, McGraw-Hill Irwin.

Course Objective:

The firm is an economic entity that strives to create wealth. The firm's success depends on the skills of its managers in making decisions that determine the firm's interaction with its economic environment. This course examines these decisions:

- ◆ The investment decision: How managers look into an uncertain future and decide what assets the firm will acquire based on their view of their competitive markets.
- ◆ The financing decision: How managers obtain the capital necessary to purchase the assets they require. These decisions are made in a market framework. This requires that we also understand the major aspects of markets and how they influence these decisions.

Aspects of market-based decisions:

A market is a structure within which individuals and institutions buy and sell goods and services. This is a simple concept; however, it has tremendous—and often unrealized—implications for those making corporate managerial decisions. The following implications will be woven into this course.

- ◆ Market values: Companies operate in a market environment. Choice and competition exist in this environment and affect all decisions, even those that may appear strictly internal to the company. Managers must value projects from the viewpoint of those outside of the company whose choice determines the company's survival and profitability: investors and customers.
- ◆ Cash flow: There are several classes of information available to managers: internally-focused information for control, externally-focused information for reporting, accounting information that follows specified procedures, economic information for financial asset pricing, etc. While all information has the same ultimate focus—to measure the wealth effects of decisions—managers must understand how these information sources differ and when they should be used. The selection and use of information flows is guided by the unifying concept of cash flow analysis.
- ◆ Time value of money: Interest rates exist: the value of a dollar expended today is not the same as a dollar received in three years. Managers must be able to relate investments made in the current period with cash inflows expected to be received from investments at a future point in time.
- ◆ Risk: Projects extend into an uncertain future. Managers must develop procedures for factoring this uncertainty into cash flow estimates and into the interest rate used to relate cash flows at different points in time.
- ◆ Opportunity cost: All projects must provide an acceptable rate of return. This return, often called the required rate of return, the discount rate, the hurdle rate, etc., is the opportunity cost—the basis for all decisions. Managers must determine the acceptable rate of return for their projects.

Course performance objectives:

In this course we take these important concepts and translate them into specific skills that you can apply in your career. These include:

- ◆ Identify the forces that a market economy generates and understand how these forces shape a firm's structure and decision-making process.
- ◆ Draw on the substantial amount of information available to make decisions. This includes the basic financial statements of a business and other important internal and external information concerning its operations.
- ◆ Determine and use an opportunity cost. This is the most important concepts in financial decision making! Use market information and a market-based definition of risk to determine the hurdle rate/required rate of return for an asset and apply this rate to determine a project's economic profit: it's Net Present Value.
- ◆ Be able to phrase the cash flows developed by a project through time, and apply an opportunity cost to determine whether the project would be a profitable one.
- ◆ Understand how a firm raises capital via debt and equity and how the capital markets influences the way projects are evaluated.

A Cooperative Effort:

I hope that this course will be an important element of your education. I am most interested in your thoughts and how you are developing in the course and welcome your comments as the course progresses--with your feedback the course will be a better career-developmental experience for you and your fellow students. Also, if at any time what is expected of you is unclear, if you are having problems with specific assignments, or have other difficulties with the course please see me.

Calculator

You will need a business calculator for this class. The calculator should have the following keys: IRR, n, i, PV, PMT, FV, and CF. As long as those keys are present, the calculator is fine. If you may consider taking the CFA exam in the future, I recommend the Texas Instruments BA II Plus (this calculator one of only two calculators that may be used on the CFA exam). The other calculator which is permissible for the CFA exam is the HP 12c. **You should bring a financial calculator to every one of our class meetings.**

Course Evaluation

The course evaluation consists of four tests plus instructor evaluation. The plus/minus system will be used in accordance with department policy.

Four Tests:

Purpose: The four tests in the course focus on selected major areas of finance. The tests form the major part of your evaluation and allow both you and me to evaluate your progress in the course. This on-going feedback is crucial for your success in the course. Each part of the course builds on what has gone before. For example, if you do poorly in the first test, you probably will not have the foundation to do well on the second test.

Value: The points for each test are: Test 1 (in class) 25%; Text 2 (in-class) 25%; Text 3 (in-class) 25%; Test 4 (during final exam period) 25%.

Grade Adjustments

Purpose: In the past a very few students have not cooperated with me in the administering of the course. To minimize such occurrences, I may, at my discretion, penalize students by subtracting points from their grades for certain occurrences.

Course Policies and Procedures

Prerequisites:

I assume that you have a comprehensive understanding of accounting theory and an understanding of the basic economic concepts.

Course Policies

"Make-up or extra work" to improve your grade is not possible. Your final letter grade is determined solely by

your scores on the tests. In addition, no special considerations concerning your general academic situation can be offered. The final grade in the course, once assigned, will not be changed except in the event of a recording error.

You are responsible for all material assigned. Do not construe any guidance that I give as limiting what you are responsible for except as I explicitly state in an email to the class that certain material will not be covered on a test.

If you do not attend a class it is entirely your responsibility to determine what you have missed, including any administrative announcements I may have made.

Use of calculators in the course will be addressed in more detail in the lectures. However, from the outset, it should be emphasized that the calculator cannot replace an understanding of the problem solving process.

Scholastic Dishonesty

Any individual suspected of cheating will be disciplined to the maximum extent possible. Storing information other than formulae in a calculator used in a test is cheating.

“The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Program’s Statement on Scholastic Dishonesty at <http://www.mcombs.utexas.edu/BBA/Code-of-Ethics.aspx>. By teaching this course, I have agreed to observe all faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all student responsibilities described in that document. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.”

Blackboard

The class uses Blackboard, part of The University's e-University Initiative.

Password-protected class sites will be available for all accredited courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging e-mail, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Room 1. For information on restricting directory information see: <http://www.utexas.edu/student/registrar/catalogs/gi02-03/app/app09.html>.

Study Guidelines

There are two primary resources for the course

- ◆ The overheads and the class notes contain the important points in this course. I have identified the most important points for discussion in class. I also know what elements of the material are more difficult for students to understand and use the class meetings to make them clear in class. I have also developed examples that will make the text materials more understandable.
- ◆ The text is an excellent one, and provides a well-written, detailed structure for your efforts. It covers the materials in more depth than we can cover in class and provides many definitions, descriptions and examples that provide a comprehensive treatment of each topic.

You need to integrate the information contained in the above resources, understand what you are studying, whether it is conceptual or analytical, and apply it not only within the context of the course, but also to current business issues and topics covered in your other courses. Be an active student.

Ask yourself such questions as:

- i) What is the purpose of this concept or formula?
- ii) Why is it important?
- iii) How does the instructor or author demonstrate its importance?
- iv) How does it "fit" with what you have studied so far--either in this class or in an earlier class?

Rephrase the information in your own words. Develop your own examples.

You should examine each chapter once right before it is discussed in class. I will discuss the major elements of the chapter and integrate it with other course material and other materials from other courses, but I do not have the time to discuss *everything* you need to know. Read the chapter thoroughly after the topic is covered in class, and then answer the concept questions and quantitative problems, being sure to connect what these problems are focusing on with what we discussed in class and what is contained in the chapter. If you are having trouble with a concept/problem, see the TA or me as soon as possible.

You should work the problems in the assigned chapters. You do not have to hand in the solutions; however, I encourage you to thoroughly work through them. The test problems will appear simpler for those who work these questions. Any amount of reading of the chapters will not help you consolidate the material if you don't work out the problems. I will give more specific guidance concerning these problems as the semester progresses. To reiterate, students that thoroughly work through the problems and understand their logic will tend to do much better on the exams and will also be better prepared for future courses.

Course Schedule

The dates in this schedule are approximate; the actual pace of the class will determine the speed of the course. The topics covered for each exam may change based on material that we cover in class. I will announce any changes to what topics will be tested on each exam in a class meeting prior to the test. Changes that are announced in class will not necessarily be post on blackboard. It is your responsibility to know which topics will be covered by each exam.

<i>Dates</i>	<i>Subject</i>
Aug 30	Course Introduction
Sept 4	Chapter 1 – Part A. The market-based economy
Sept 6	Chapter 1 - Part B. Corporate goals
Sept 11	Chapters 2 & 3. Accounting value
Sept 13	Chapters 2 & 3. Accounting value (Continued)
Sept 18	Chapter 4 - Part A. Economic value
Sept 20	Chapter 4 - Part A. Economic Value (Continued)
Sept 25	Chapter 4 - Part B. Cash flow skills
Sept 27	Chapter 4 - Part B. Cash flow skills (Continued)
Oct 2	Review
Oct 4	Exam #1 (Covering chapters 1-4)
Oct 9	Chapter 5. Valuing long-term debt
Oct 11	Chapter 5. Valuing long-term debt (Continued)
Oct 16	Chapter 6. Valuing equity
Oct 18	Chapter 6. Valuing equity (Continued)
Oct 23	Chapter 7. Capital Budgeting: Investment decision rules and Review
Oct 25	Exam #2 (Covering chapters 5, 6)

Oct 30	Chapter 8. Capital Budgeting: Cash Flow Analysis
Nov 1	Chapter 9. Capital Budgeting: Strategy and Analysis and Review
Nov 6	Chapter 10. Risk and Return – Assets and Portfolios
Nov 8	Chapter 11. Risk and Return – Opportunity Cost and CAPM & Review
Nov 13	Chapter 11. Risk and Return – Opportunity Cost and CAPM (Continued)
Nov 15	Chapter 12. Cost of Capital and Review
Nov 20	Exam #3 (Chapters 7, 8, 9, 10, 11)
Nov 22	Thanksgiving Holiday
Nov 27	Chapter 13. Market Efficiency
Nov 29	Chapters 14 & 15. Capital Structure and Firm Value
Dec 4	Chapters 14 & 15. Capital Structure and Firm Value & Review
Dec 6	Finance in the Real World (including Financial Modeling with DCF)

The Fourth Exam will cover Chapters 12 through 15

Dec. 14 9:00-12:00 Noon Fourth Exam

Course Assignments

The major elements in the course are divided into sixteen topics. Each topic has four or five comments.

Main Issue: This is the major question highlighting the focus of the topic and indicating why it is important to you as a business decision-maker

Readings: Most of the readings are from the text. A few topics have additional supplemental readings. I may add short articles from the business press to your reading assignment as the semester progresses.

Questions and Problems: These are the minimum you should do! I recommend you work all the questions and problems at the end of the assigned chapters. If you cannot, the listed problems are those that you must work to ensure that you have a good grasp of the materials. Make sure that you understand the logic involved in the problem, not just its mechanics.

Study Comments: These are suggestions that will help you as you study the materials.

Course Introduction

No assignment

Chapter 1 – Part A. The Market-based economy:

Main Issue: What forces shape corporate decision-making?

Reading: Text: Chapter 1

Questions and Problems: None

Study Comments: You should understand the market framework that underlies business decisions before you examine the basics of financial management. I thus split the text's Chapter 1 materials into two topics. Please read the assigned chapter sections before coming to the appropriate class.

Chapter 1 – Part B. Corporate goals

Main Issues: What is the goal of a corporation?

Reading: Text, Chapter 1

Questions and Problems: None

Study Comments: Once we have finished Part B., you should go back and study Chapter 1 in its entirety. You will better see how the text sessions are interrelated.

Chapters 2 & 3. Accounting value

Main Issue: What information can managers obtain from the firm's financial statements?

Reading: Text, Chapter 2
Text, Chapter 3

Concept Questions: Chapter 2: 1-9, excluding 4
Chapter 3: 1,2,3,6,13,14

Questions and Problems: Chapter 2: 4,8,9,19, 28a,b, and c
Chapter 3: 1, 2, 6, 7, 14, 16, 26,

Study Comments: Managers use two information systems—accounting and economic (cash flow). These are interrelated and you can't understand one without studying the other. In this topic we analyze accounting information. We must understand the basic logic and structure of accounting as contained in the main accounting statements. We must also be able to use these statements to identify specific characteristics of the firm being analyzed. Accounting values are the basis for developing cash flow information used in economic valuation. Finance majors should work through all of the problems in these chapters.

Chapter 4 - Part A. Economic value

Main Issue: How do managers evaluate projects?

Reading: Text, Chapter 4

Concept Questions: None

Questions and Problems: None

Study Comments: This topic sets out the logic and process of economic evaluation. Even though this is a short reading assignment, it is very important. The process introduced here allows us to quantify economic decisions and is the foundation for all valuation calculations.

Chapter 4 – Part B. Cash flow skills

Main Issue: How do managers handle complex cash flows?

Reading: Text, Chapter 4

Concept Questions: 1-8,

Questions and Problems: 1-5, 7-49 odd problems excluding 33,39

Study Comments: You must be able to evaluate an investment's cash flow and identify the time-value techniques necessary to simplify these cash flows, converting them into a form amenable for *NPV* analysis.

Practice is essential! I suggest that you work two or three problems and then check your answers to see how you did. Look for the logic behind the solutions, not just that you have the right answer. Then attempt the next three problems. The problems seem to get more difficult as you progress through the problem set; however, the while the later problems seem very complex, they are really based on only a few basic types of time-value calculations. If you work through the odd-numbered problems and still have difficulties, see me and let's talk over how you're approaching this topic. You can then attempt the even-numbered problems.

Chapter 5. Valuing Long-term debt

Main Issue: How do investors value bonds?

Reading: Text, Chapter 5

Concept Questions: 1 through 18 excluding 11,15

Questions and Problems: 1 through 20

Study Comments: This topic allows you to apply the basic valuation concepts of and the time value concepts of Chapter 4 to value a financial security. Bond values are determined by two major factors (1) the interest rate, which is determined by market conditions, and (2) the default risk of the bond, as reflected in the bond rating. Ensure that you go beyond time-value calculations to truly understanding these factors. There is a substantial amount of descriptive material that we will not cover in class, but that you should study carefully.

Chapter 6. Valuing equity

Main Issue: How do investors determine stock prices?

Reading: Text, Chapter 6

Concept Questions: 1 through 12

Questions and Problems: Odd numbered problems 1 through 31 (Replace problem 15 with problem 14) excluding 17,19,

Study Comments: The stock price is the major connection between the corporation and the stockholder. The

constant growth model is the basic framework for stock valuation: you should understand it well. Our discussion of growth stock, income stock, EPS and P-E ratio is crucial for an understanding of the stock markets. There is a substantial amount of descriptive material that we will not cover in class, but that you should study carefully.

Chapter 7. Capital budgeting: Investment decision rules

Main Issue: How can managers identify wealth-increasing projects?

Reading: Text, Chapter 7.

Concept Questions: 1 through 14

Questions and Problems: 1 through 23, omit 11

Study Comments: This topic introduces five evaluation methods. Each of these evaluation methods gives a decision rule to determine whether a project should be adopted. You should understand how these evaluation methods are used and be able to compare their strengths and weaknesses. You should also understand the situations when they can be properly used and when they might give inappropriate results.

Chapter 8. Capital budgeting: Cash flow analysis

Main Issue: How can managers identify and organize cash flows for analysis?

Readings: Text, Chapter 8

Concept Questions: 1 through 12

Questions and Problems: 1 through 27, omit 2, 5, 8, 11, 19, 25, and 26

Study Comments: The focus here is on setting up a timeline that contains the cash flows involved in a capital budgeting project. This involves identifying what cash flows are relevant and where they occur in time. Just as important, you must also know what cash flows and accounting numbers are irrelevant. In this topic I add a couple of techniques that give you a better set of skills with which to approach capital budgeting problems. Finance majors should work all problems in the chapter—you'll really appreciate this when you hit Fin 370!

Chapter 9. Capital budgeting: Strategy and analysis

Main Issue: How do managers apply capital budgeting techniques in an imperfect world?

Readings: Text, Chapter 9

Concept Questions: 1 through 10

Questions and Problems: 1 through 4, 9, 10, 20

Study Comments: There is a major issue that managers must address in applying the capital budgeting techniques presented in Chapters 8 and 9: How do managers take into account that our future cash flow estimates are uncertain?

Chapter 10. Risk and return: Assets and portfolios

Main Issue: What is diversification?

Readings: Text, Chapter 10;

Concept Questions: Chapter 10: 1 through 10

Questions and Problems: Chapter 10: 1 through 15 excluding 5, 6, 7, 8, 9, 11

Study Comments: The risk and return material is covered in several class sessions and two chapters in the text. There is, however, a linear progression of concepts from the initial discussion of risk and variability in Chapters 10 to Chapter 11's development of a financial model that allows managers to calculate the opportunity cost to use in NPV analysis. Here are some specific comments to guide you through this material.

- I do not expect you to memorize the statistics contained in the first part of Chapter 10; however, you should understand the historical record of returns for various types of financial securities.
- The concept of co-variability underlies the entire risk-return discussion. You should understand this concept and how it is used throughout our discussion.
- This topic contains important statistical concepts, introduced in your stat course. You should refresh your understanding of these concepts so that you can follow the relationships developed in this Session.
- This topic contains a substantial amount of quantitative materials. Some of the quantitative discussion is used to develop our understanding of diversification, some to develop specific results that are used to make business decisions. I will specify in class the quantitative procedures that you should master.

Chapter 11. Risk and return: Opportunity cost and CAPM

Main Issue: How can managers calculate the opportunity cost for a project?

Readings: Text, Chapter 11: Sections 4 through 10

Concept Questions: Chapter 11: 1 through 14

Questions and Problems: Chapter 11: 1 through 32, omit 7,9,17, 18, 19, 21, 22, 25, 26,

Study Comments: There are two major transitions in this discussion: (1) the change in our definition of risk from variance to beta and (2) the segue from beta by itself to beta's use as part of the opportunity cost's risk premium.

Chapter 12. Cost of capital

Main Issue: How does the firm's capital structure affect projects' opportunity cost?

Readings: Text, Chapter 12

Concept Questions: 1, 2, 5-10

Questions and Problems: 1 through 14

Study Comments: There is a major connection between the required returns on the firm's debt and equity in the capital markets and the discount rate used in capital budgeting projects. The degree of this connection depends on whether the project's risk matches that of the firm's existing assets.

Part VI: Other factors affecting stockholder wealth

Chapter 13. Market efficiency

Main Issue: Do stock prices reflect managers' decisions?

Readings: Text, Chapter 13

Concept Questions: 1 through 28

Questions and Problems: None

Study Comments: Our entire treatment of financial management is based on a market framework. The connection between the market participants' evaluation of managerial decisions and the company's stock price is an extremely important one.

Study Recommendations: There is a lot of controversy on the EMH. Think through these issues and make your own determination on the markets that you face and a manager and as an investor.

Chapters 14 & 15. Capital structure and firm value

Main Issue: Can managers use debt to increase stockholder wealth?

Readings: Text, Chapters 14, 15

Concept Questions: Chapter 14: 1 through 10; Chapter 15: 1 through 10, omit parts 4C and 6B

Questions and Problems: Chapter 14: 1 through 15 excluding 4,6, 7, 10 ; Chapter 15: 1,2, 3, 8

Study Comments: The material in the two chapters assigned is interrelated so I am covering them as one topic.

Test Policies

Grading:

The grade on each question will be the result of the grader's evaluation of your answer based on the test key and the general response of the class to the question. This evaluation will take into account not only the presence of key terms but also the degree to which the student has demonstrated an *understanding* of the issues involved in the question. The grade assigned is an informed and final evaluation, not the beginning offer in a bargaining process. In many items partial credit will be awarded.

For each test, I will indicate a tentative letter grade for your test score. However, the final letter grade will be based on a relative frequency distribution (percentile ranking) of the total points accumulated over the entire semester. This approach implies that your final grade will be determined by the relative performance of the entire class. That is, there is no predetermined standard as to what constitutes an A, B+, B-, etc. (e.g., the cutoff for an "A" may be below the 90th percentile ranking). Because of this relative ranking, questions about what your grade or standing in class is cannot be answered until all tests have been taken and graded.

Grades will be posted on our BlackBoard site.

Test reviews:

Some class time may be allocated after each in-class test for a review of that test. The purpose of this review is to reinforce the concepts covered in the test. Tests will not be returned for you to keep.

Students who disagree with the grade assigned may request a regrade of a question in the examination. This request must be in writing (email is OK), giving the question in contention and the reason why the student feels that the answer given is correct. You have 1 week after the exam is returned to request a regrade. I will not entertain any requests after the end of the test review period. It is also your responsibility to check your grade on blackboard to ensure that the posted grade matches the grade you made on the exam.

Test Policies

Students missing a test without my prior permission will receive the lowest grade awarded to students taking that test. Students missing a test with my permission will have the points for the missed test added to their final test. As an example, if you miss the second test because of an excused absence, the points of that test will be added to the last test. In addition, I reserve the right to give a last test that differs from that given to the students who are taking the regular third test.

Requests for excuse from a test must be made *in writing or email* and, except for extreme emergencies, prior to the test.

I will give notice when the time for an exam has expired. I will give two minutes for students to complete their work and turn in their exams. Students who do not turn in their tests by the time I have indicated will have 5 points deducted from their test grade.

Grade Adjustments

While you primarily bear the consequences of your actions in this course, your actions may also have a direct effect on other students and me. In registering for my course you are entering into a contract with me that specifies the actions that we mutually agree to. If you do not live up to your part of our agreement, you face certain penalties. I hope that no penalties will be assigned this semester but you should, when planning your activities, keep the existence of these sanctions in mind.

- ◆ Failure to turn in tests when requested: Five points deducted from that exam.

Disabilities

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>.

Religious Holidays

“By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.”

Campus Safety

"Please note the following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, <http://www.utexas.edu/safety/> :

.. Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

.. Familiarize yourself with all exit doors of each classroom and building you may occupy.

Remember that the nearest exit door may not be the one you used when entering the building.

.. Students requiring assistance in evacuation should inform their instructor in writing during the first week of class.

.. In the event of an evacuation, follow the instruction of faculty or class instructors.

.. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.

.. Behavior Concerns Advice Line (BCAL): 512-232-5050

.. Further information regarding emergency evacuation routes and emergency procedures can be found at: www.utexas.edu/emergency."

Finance 357 Sample Exam Questions

Fill in the Blank

1. _____ represents the proportions of the firm's financing from current and long-term debt and equity. (2 words)
2. _____ is a noncash expense that is an allocation of the historical cost of an asset over its economic life.

Multiple Choice

-
1. The New York Stock Exchange is an example of this type of market
 - a. Over-the-counter Market
 - b. Dealer Market
 - c. Auction Market
 - d. Futures Market
 - e. Underwriting Market

Quantitative

1. You own a share of stock that gains 12% in year 1, loses 20% in year 2, gains 15% in year 3, and gains 20% in year 4. What is your geometric average return over the 4 years? (Set your calculator to 4 decimal places)

Answer: _____