1. Your friend is celebrating her 30th birthday today and wants to start saving for her anticipated retirement at age 60. She wants to be able to withdraw $50,000 from her savings account on each birthday for 15 years following her retirement; the first withdrawal will be on her 61th birthday. Your friend intends to invest her money in the local bank, which offers percent interest per year. She wants to make equal annual payments on each birthday into the account established at the credit union for her retirement fund.If she starts making these deposits on her 31th birthday and continues to make deposits until she is 60 (the last deposit will be on her 60th birthday), what amount must she deposit annually to be able to make the desired withdrawals at retirement?
2. ABC Company maintains an operating profit margin of 10% and a sales-to-assets ratio of 2.5. It has assets of $400,000 and equity of $200,000. Interest payments are $30,000 and the tax rate is 30%.

a. What is the return on assets?

b. What is the return on equity?

1. Suppose you are depositing an amount today in an account that earns 12% interest, compounded quarterly. If your goal is to have $10,000 in the account at the end of six years, how much must you deposit in the account today? Compute effective annual interest rate.
2. Suppose you want to have $0.5 million in your account by your 40s. You are 20 years old now. If you want to deposit equal amount of 10 payments in a bank paying 10% every other year starting 2 years from now, compute the quantity of money that you have to deposit in each period.
3. What is the present value if the project instead pays cash flows that grow at a rate 10% per year for 8 years, starting with a cash flow of $500 two years from now? Suppose, interest rate is 20%.
4. You are valuing a firm that is expected to earn cash flows that grow at 10% for the first 3 years, at 20% for the next 5 years and at 5% in perpetuity thereafter. The first cash flow is $100 and you estimate a discount rate of 15%. What is the present value of these cash flows?
5. Calculate the present value of each cash flow using a discount rate of 7%. Which do you most prefer most? Show and explain all supporting calculations.

*Cash flow A: receive $60 today and then receive $60 in four years, starting 3 years from now.*

*Cash flow B: receive $15 every year, forever, starting today.*

*Cash flow C: pay $50 every year for five years, with the first payment being next year, and then subsequently receive $30 every year for 20 years.*

1. If you deposit $2,500 in a bank account that earns 12% annually on a
2. quarterly; b) monthly c) continuous compounded basis, what will be the account balance in 7 years?
3. An investment is expected to pay $500 per month for the next 14 months, afterwards $100 for 6 months. Compute the value of investment, if discount rate is 15%.
4. You’ve just got 2 job offers. They’ve offered two different salary arrangements. You can have $100,000 per year for the next 5 years, or you can have $150,000 per year for the next two years, along with a $100,000 signing bonus today. If the interest rate is 8 percent compounded quarterly, which job do you prefer?
5. What is the value of an investment that pays $5,200 every otheryear forever, if the first payment occurs 3 years from today and the discount rate is 12 percent compounded semiannually?
6. Suppose you are planning to continue your education in a collage 5 years from now and education will last for 4 years. Annual tuition fee is $15,000 and have to be paid at the end of each academic year. Your plan is to deposit 5 equal amount of payments in your bank account, with the first payment starting today. If bank pays 8% annual return, calculate the amount of annual payments.
7. You have a contract with your local pension fund. The terms are that you’ll retire in your 60 age, fund will pay you $2000 at the end of each year, for 20 years. According to contract, you have to pay 10 equal amount of payments to fund, starting today. If you are 40 years old now, what is the value of your annual payments to fund? Suppose interest rate is 10%.
8. As a winner of competition you have to choose one of the following prizes:

* $15,000 now;
* $20,000 three years from now;
* $2,000 a year forever;
* $10,000 now and $10,000 at the end of 2nd year;
* $1,500 at the end of the year and increasing thereafter by 5% forever.

If the interest rate is 15%, which is the most valuable prize?

1. You and your brother are saving to buy a car at the end of 6 years. If the car costs $10,000 and your local bank pays 15% a year on their savings, how much do you need to put aside at the end of years 1 through 5?
2. You have to make a choice between two suggested projects. Project A will bring $10,000 for next 2 years and thereafter $1,000 forever. Project B will result in perpetuity of $3000 that will grow 5% forever. If opportunity cost is 15%, which project is more profitable for you?
3. Your father is celebrating his 45th birthday needs your help in his retirement problem. He plans to be retired in his 65s. Staring from his 66th birthday, he wants to be able to withdraw $50,000 in each birthday for 15 years. He is 45 years old now and wants to make annual payments until he is 65years old. Suppose, your father expects to receive $20,000 when he will be 50 years old and have a plan to put this amount in his account also. How much money he have to deposit each year starting 1 year from now?
4. Explain the uses of financial ratio analysis.
5. The role of financial system in the economy.
6. The uses of financial statements.
7. What factors affect the value of money over time?
8. Leverage ratios. The uses of leverage ratios.
9. Efficiency ratios. The uses of efficiency ratios.
10. DuPont Identity. Breaking down of DuPont identity.
11. Explain the difference market value and book value. Can **a)** market value **b)** book value of an asset change? Why?
12. ABC Corporation is growing rapidly and according to strategic plan of Board of Directors, retained earnings is used for reinvestment purposes rather than dividend payment.  However, Corporation is expected to pay dividends, with the first dividend of $10, 4 years from today.  Dividends are supposed to have super-normal growth rate of 30% for 3 years.  After 7th year, company will grow at a constant rate of 5%. If company beta is 1.2, expected return in the market 11% and return of risk-free asset is 3%, what is the value of stock?
13. GNL Electronic Corporation has an ROE=9%, has a beta of 1.25, and plans to maintain indefinitely its traditional plowback ratio of 2/3. This year’s earnings were $3 per share. The annual dividend was just paid. The consensus estimate of the coming year’s market return is 14%, and T-bills currently offer a 6% return. a. Find the price at which stock should sell. b. Calculate the P/E ratio. c. Suppose your research convinces you GNL Electronic will announce momentarily that it will immediately reduce its plowback ratio to 1/3. Find the intrinsic value of the stock.
14. The risk-free rate of return is 8%, the expected rate of return on the market portfolio is 15%, and the stock of XYZ Corporation has a beta coefficient of 1.2. XYZ pays out 40% of its earnings in dividends, and the latest earnings announced were $10 per share. Dividends were just paid and are expected to be paid annually. You expect that XYZ will earn an ROE of 20% per year on all reinvested earnings forever. a. What is the intrinsic value of a share of XYZ stock? b. If the market price of a share is currently $100, and you expect the market price to be equal to the intrinsic value 1 year from now, what is your expected 1-year holding-period return on XYZ stock?
15. The General Electronic Corporation pays no cash dividends currently and is not expected to for the next 5 years. Its latest EPS was $10, all of which was reinvested in the company. The firm’s expected ROE for the next 5 years is 20% per year, and during this time it is expected to continue to reinvest all of its earnings. Starting in year 6, the firm’s ROE on new investments is expected to fall to 15%, and the company is expected to start paying out 40% of its earnings in cash dividends, which it will continue to do forever after. GE’s market capitalization rate is 15% per year. a. What is GE’s intrinsic value per share? b. What effect would it have on your estimate of DEQS’s intrinsic value if you expected DEQS to pay out only 20% of earnings starting in year 6?
16. The Merry Corporation’s cash flow from operations before interest and taxes was $2 million in the year just ended, and it expects that this will grow by 5% per year forever. To make this happen, the firm will have to invest an amount equal to 20% of pretax cash flow each year. The tax rate is 35%. Depreciation was $200,000 in the year just ended and is expected to grow at the same rate as the operating cash flow. The appropriate market capitalization rate for the unleveraged cash flow is 12% per year, and the firm currently has debt of $4 million outstanding. Use the free cash flow approach to value the firm’s equity.
17. A share of stock sells for $50 today. It will pay a dividend of $6 per share at the end of the year. Its beta is 1.2, market expected return is 16% and expected return of T-Bills is 6%. What do investors expect the stock to sell for at the end of the year?
18. I am buying a firm with an expected perpetual cash flow of $1,000 but am unsure of its risk. If I think the beta of the firm is 0.5, when in fact the beta is really 1. If market expected return is 16% and expected return of T-Bills is 6%, how much more will I offer for the firm than it is truly worth?
19. Stock Y has a beta of 1.25 and an expected return of 12.6%. Stock Z has a beta of 0.8 and an expected return of 9.9%. If the risk-free rate is 4.1% and the market risk premium is 7%, are these stocks correctly priced?
20. The Lotus Tech Company management is planning to pay dividend that will grow 30 percent for 3 year, with the first payment equal to $10 and paid after 3 years from now. Afterwards, growth rate will decline to 7% and continue indefinitely. Compute current share price.
21. ABC company wants to issue new 10-year bonds for some much needed expansion projects. The company currently has 8 percent coupon bonds on the market that sell for $1,095, make semiannual payments, and mature in 10 years. What coupon rate should the company set on its new bonds if it wants them to sell at par?
22. The Moulon Rouge Corporation has two different bonds currently outstanding. Bond M has a face value of $20,000 and matures in 20 years. The bond makes no payments for the first six years, then pays $1,000 every six months over the subsequent eight years, and finally pays $1,750 every six months over the last six years. Bond N also has a face value of $20,000 and a maturity of 20 years; it makes no coupon payments over the life of the bond. If the required return on both these bonds is 12 percent compounded semiannually, what is the current price of Bond M? Of Bond N?
23. A six-year government bond makes annual coupon payments of 5% and offers a yield of 3% annually compounded. Suppose that one year later the bond still yields 3%. What return has the bondholder earned over the 12-month period? Now suppose that the bond yields 2% at the end of the year. What return would the bondholder earn in this case?
24. You have to make a choice between two corporate bonds. First bond offers you 6% annual coupon rate paid semiannually, during 6 years, and $1000 lump sum payment at the end of 6th year. Second bond is zero coupon bond with $1000 face value and maturing in 5 years. Market interest rate is 8%. If market price of First bond is $850 and Second bond is $750, which one of these two investments is more beneficial?
25. Compute price of a bond with $1000 par value, 8% coupon rate paid quarterly and 5 years maturity. Suppose market interest rate is 10%.
26. A bond with $2000 par value and 6 years maturity makes quarterly coupon payments. If the value of bond is $1350 and market interest rate is 8 percent, compute annual coupon rate.
27. Suppose that today you buy a 9% coupon bond making annual payment for $1150. The bond has 10 years to maturity. Two years from now interest rate declined by 1% and you decided to sell. What price will your bond sell for? What is HPY on your investment?
28. How does preferred stock differ from a)bond; b)common stock?
29. What does beta measure?
30. What is the use of CAPM
31. Explain discounted cash flow method of stock valuation.
32. What is the difference between systematic and unsystematic risk?
33. Difference between value and growth stocks.
34. How is volatility of bond measured?
35. Explain negative relationship between bond price and interest rate.
36. Explain different types of yield curves.
37. Importance of WACC in capital budgeting.
38. Explain why NPV rule is preferred over IRR, when they conflict?
39. M&M proposition I with and without tax
40. M&M proposition II with and without tax.
41. Cost of equity.
42. Cost of debt.
43. Payoff and profit diagram of put option.
44. Payoff and profit diagram of call option.
45. Explain the relationship between financial leverage and cost of equity.
46. Put-call parity.
47. AMC corporation issued 20 year, 8 percent semiannual bond 10 years ago. The bond currently sells 105 percent of its face value. Corporate tax rate is 30 percent.

a) What is pre-tax cost of debt?

b) What is after tax cost of debt?

c) Which is more relevant, pretax or aftertax cost of debt? Why?

1. Total debt of XXX Corporation is 6 million dollar, which is to be paid in 30 years. According to debt contract, monthly payment is 40 thousand dollar. Price per share  is $40, and company has 1 million shares outstanding. Company has just paid $ 5 dividend, which has 7 percent constant growth rate. If corporate tax rate is 25 percent, compute WACC of XXX Corporation.
2. Suppose market return is 20%,  risk free rate is  5%, and stock beta is 1.2. Firm’s current debt is $15000 that is due to be paid in 6 years as a lump sum payment (no annual payments). If firm’s debt to equity ratio is 0.75, calculate cost of capital.
3. You are a consultant to a large manufacturing corporation that is considering a project with the following net after-tax cash flows (in millions of dollars):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Years | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Cash flow | -20 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

The project’s beta is 1.5. Assuming that Rf= 8% and E(RM)=16%, what is your advice to your company about this project? Suppose company uses NPV rule in its capital budgeting decisions.

1. N&A Manufacturing Company uses discounted payback period to evaluate investments in capital assets. Initial cost of investment is 35 million dollar, followed 800 thousand dollars cash inflow during 8 years. The company’s cost of capital is 12 percent. Compute discounted payback period of the investment. Is the investment desirable if the required payback period is 4 years or less.
2. Tool Manufacturing has an expected EBIT of $35,000 in perpetuity and a tax rate of 35 percent. The firm has $70,000 in outstanding debt at an interest rate of 9 percent, and its unlevered cost of capital is 14 percent. What is the value of the firm according to M&M Proposition I with taxes? Should Tool change its debt-equity ratio if the goal is to maximize the value of the firm? Explain.
3. ABC Co. and XYZ Co. are identical firms in all respects except for their capital structure. ABC is all-equity financed with $600,000 in stock. XYZ uses both stock and perpetual debt; its stock is worth $300,000 and the interest rate on its debt is 10 percent. Both firms expect EBIT to be $73,000. Ignore taxes. ABC Co. owns $30,000 worth of XYZ's stock. What rate of return is she expecting? Show how ABC could generate exactly the same cash flows and rate of return by investing in ABC and using homemade leverage. What is the cost of equity for ABC? What is it for XYZ?
4. Bruce & Co. expects its EBIT to be $95,000 every year forever. The firm can borrow at 11 percent. Bruce currently has no debt, and its cost of equity is 22 percent. If the tax rate is 35 percent, what is the value of the firm? What will the value be if Bruce borrows $60,000 and uses the proceeds to repurchase shares?
5. SLG, Inc., is considering a project that will result in initial after-tax cash savings of $4 million at the end of the first year, and these savings will grow at a rate of 5 percent per year indefinitely. The firm has a target debt-equity ratio of 0.75, a cost of equity of 16 percent, and an after-tax cost of debt of 6 percent. The cost-saving proposal is somewhat riskier than the usual project the firm undertakes; management uses the subjective approach and applies an adjustment factor of -2 percent to the cost of capital for such risky projects. Under what circumstances should SLG, Inc. take on the project?
6. Assume you are in a Modigliani Miller world with corporate taxes added. CD Corp. is all equity financed with 5,000 shares outstanding worth $7 each. They are planning on issuing $10,000 of new perpetual debt at the 8% market rate of interest. The effective tax rate is 25%. What is the market value of the firm’s outstanding equity after they make the debt for equity exchange?
7. New GNR Industries has a debt-equity ratio of 1.5. Its WACC is 12 percent, and its cost of debt is 12 percent. The corporate tax rate is 35 percent.

a. What is New GNR’s cost of equity capital?

b. What is New GNR's unlevered cost of equity capital?

c. What would the cost of equity be if the debt-equity ratio were 2?

1. Old Mining Corporation expects an EBIT of $9,000 every year forever. Old Mining currently has no debt, and its cost of equity is 17 percent. The firm can borrow at 10 percent. If the corporate tax rate is 35 percent, what is the value of the firm? What will the value be if Old Mining  converts to 50 percent debt? To 100 percent debt?
2. A stock is currently selling for $54 per share. A call option with an exercise price of $55 sells for $3.10 and expires in three months. If the risk-free rate of interest is 2.6 percent per year, compounded continuously, what is the price of a put option with the same exercise price?
3. A call option with an exercise price of $90 and four months to expiration has a price of $9.02. The stock is currently priced at $94.30, and the risk-free rate is 5 percent per year, compounded continuously. What is the price of a put option with the same exercise price?
4. Stock in the Nanotech Corporation is currently selling for $25 per share. In one year, the price will be either $20 or $30. T-bills with one year to maturity are paying 10 percent. What is the value of a call option with a $20 exercise price?