公司金融 /2022 秋冬/HW#1

Chapter 2

Question 1

Building a Balance Sheet Bishop, Inc., has current assets of $5,700, net fixed assets of $27,000, current liabilities of $4,400, and long-term debt of $12,900. What is the value of the shareholders' equity account for this firm? How much is net working capital?

Question 2

Building an Income Statement Travis, Inc., has sales of $387,000, costs of $175,000, depreciation expense of $40,000, interest expense of $21,000, and a tax rate of 35 percent. What is the net income for the firm? Suppose the company paid out $30,000 in cash dividends. What is the addition to retained earnings?

Question 3

Calculating OCF Ranney, Inc., has sales of $18,700, costs of $10,300, depreciation expense of $1,900, and interest expense of $1,250. If the tax rate is 40 percent, what is the operating cash flow, or OCF?

Question 4

Calculating Total Cash Flows Schwert Corp. shows the following information on its 2012 income statement: sales = $185,000; costs = $98,000; other expenses = $6,700; depreciation expense = $16,500; interest expense = $9,000; taxes = $19,180; dividends = $9,500. In addition, you're told that the firm issued $7,550 in new equity during 2012 and redeemed $7,100 in outstanding long-term debt.

a. What is the 2012 operating cash flow?
b. What is the 2012 cash flow to creditors?
c. What is the 2012 cash flow to stockholders?
d. If net fixed assets increased by $26,100 during the year, what was the addition to net working capital (NWC)?

Chapter 3

Question 1

Equity Multiplier and Return on Equity Nuber Company has a debt–equity ratio of .80. Return on assets is 9.7 percent, and total equity is $735,000. What is the equity multiplier? Return on equity? Net income?

Question 2

Using the DuPont Identity Y3K, Inc., has sales of $2,700, total assets of $1,310, and a debt–equity ratio of 1.20. If its return on equity is 15 percent, what is its net income?

Question 3

Days' Sales in Receivables A company has net income of $265,000, a profit margin of 9.3 percent, and an accounts receivable balance of $145,300. Assuming 80 percent of sales are on credit, what is the company's days' sales in receivables?

Question 4

Calculating the Cash Coverage Ratio Titan Inc.'s net income for the most recent year was $8,320. The tax rate was 34 percent. The firm paid $1,940 in total interest expense and deducted $2,730 in depreciation expense. What was Titan's cash coverage ratio for the year?

Question 5

Ratios and Fixed Assets The Le Bleu Company has a ratio of long-term debt to total assets of .35 and a current ratio of 1.25. Current liabilities are $950, sales are $5,780, profit margin is 9.4 percent, and ROE is 18.2 percent. What is the amount of the firm's net fixed assets?

Chapter 4

Question 1

Present Value and Multiple Cash Flows Conoly Co. has identified an investment project with the following cash flows. If the discount rate is 10 percent, what is the present value of these cash flows? What is the present value at 18 percent? At 24 percent?

Year	Cash Flow
1	$ 960
2	840
3	935
4	1,350

Question 2

Calculating Annuity Present Value An investment offers $4,900 per year for 15 years, with the first payment occurring one year from now. If the required return is 8 percent, what is the value of the investment? What would the value be if the payments occurred for 40 years? For 75 years? Forever?

Question 3

Calculating EAR Find the EAR in each of the following cases:

Stated Rate (APR)	Number of Times Compounded	Effective Rate (EAR)
7%	Quarterly	
16	Monthly	
11	Daily	
12	Infinite	

Question 4

Growing Perpetuities Mark Weinstein has been working on an advanced technology in laser eye surgery. His technology will be available in the near term. He anticipates his first annual cash flow from the technology to be $175,000, received two years from today. Subsequent annual cash flows will grow at 3.5 percent in perpetuity. What is the present value of the technology if the discount rate is 10 percent?

Question 5

Balloon Payments On September 1, 2009, Susan Chao bought a motorcycle for $30,000. She paid $1,000 down and financed the balance with a five-year loan at a stated annual interest rate of 7.2 percent, compounded monthly. She started the monthly payments exactly one month after the purchase (i.e., October 1, 2009). Two years later, at the end of October 2011, Susan got a new job and decided to pay off the loan. If the bank charges her a 1 percent prepayment penalty based on the loan balance, how much must she pay the bank on November 1, 2011?

Chapter 5

Question 1

Calculating Payback Period and NPV Fuji Software, Inc., has the following mutually exclusive projects.

Year	Project *A*	Project *B*
0	−$15,000	−$18,000
1	9,500	10,500
2	6,000	7,000
3	2,400	6,000

a. Suppose Fuji's payback period cutoff is two years. Which of these two projects should be chosen?
b. Suppose Fuji uses the NPV rule to rank these two projects. Which project should be chosen if the appropriate discount rate is 15 percent?

Question 2

Calculating Discounted Payback An investment project has annual cash inflows of $5,000, $5,500, $6,000, and $7,000, and a discount rate of 14 percent. What is the discounted payback period for these cash flows if the initial cost is $8,000? What if the initial cost is $12,000? What if it is $16,000?

Question 3

Problems with Profitability Index The Robb Computer Corporation is trying to choose between the following two mutually exclusive design projects:

Year	Cash Flow (I)	Cash Flow (II)
0	−$30,000	−$12,000
1	18,000	7,500
2	18,000	7,500
3	18,000	7,500

a. If the required return is 10 percent and Robb Computer applies the profitability index decision rule, which project should the firm accept?
b. If the company applies the NPV decision rule, which project should it take?
c. Explain why your answers in (a) and (b) are different.

Question 4

Problems with IRR McKeekin Corp. has a project with the following cash flows:

Year	Cash Flow
0	$20,000
1	−26,000
2	13,000

What is the IRR of the project? What is happening here?

Question 5

Comparing Investment Criteria Mario Brothers, a game manufacturer, has a new idea for an adventure game. It can market the game either as a traditional board game or as an interactive DVD, but not both. Consider the following cash flows of the two mutually exclusive projects for Mario Brothers. Assume the discount rate for Mario Brothers is 10 percent.

Year	Board Game	DVD
0	−$750	−$1,800
1	600	1,300
2	450	850
3	120	350

a. Based on the payback period rule, which project should be chosen?
b. Based on the NPV, which project should be chosen?

Chapter 6

Question 1

Calculating Project NPV Raphael Restaurant is considering the purchase of a $9,000 soufflé maker. The soufflé maker has an economic life of five years and will be fully depreciated by the straight-line method. The machine will produce 1,500 soufflés per year, with each costing $2.30 to make and priced at $4.75. Assume that the discount rate is 14 percent and the tax rate is 34 percent. Should Raphael make the purchase?

Question 2

Calculating Project NPV The Best Manufacturing Company is considering a new investment. Financial projections for the investment are tabulated here. The corporate tax rate is 34 percent. Assume all sales revenue is received in cash, all operating costs and income taxes are paid in cash, and all cash flows occur at the end of the year. All net working capital is recovered at the end of the project.

	Year 0	Year 1	Year 2	Year 3	Year 4
Investment	$24,000				
Sales revenue		$12,500	$13,000	$13,500	$10,500
Operating costs		2,700	2,800	2,900	2,100
Depreciation		6,000	6,000	6,000	6,000
Net working capital spending	300	350	400	300	?

a. Compute the incremental net income of the investment for each year.
b. Compute the incremental cash flows of the investment for each year.
c. Suppose the appropriate discount rate is 12 percent. What is the NPV of the project?

Question 3

Calculating Salvage Value An asset used in a four-year project falls in the five-year MACRS class for tax purposes. The asset has an acquisition cost of $7,100,000 and will be sold for $1,400,000 at the end of the project. If the tax rate is 35 percent, what is the aftertax salvage value of the asset?

Question 4

Calculating Project NPV Scott Investors, Inc., is considering the purchase of a $360,000 computer with an economic life of five years. The computer will be fully depreciated over five years using the straight-line method. The market value of the computer will be $60,000 in five years. The computer will replace five office employees whose combined annual salaries are $105,000. The machine will also immediately lower the firm's required net working capital by $80,000. This amount of net working capital will need to be replaced once the machine is sold. The corporate tax rate is 34 percent. Is it worthwhile to buy the computer if the appropriate discount rate is 12 percent?

Question 5

Calculating NPV Howell Petroleum is considering a new project that complements its existing business. The machine required for the project costs $3.8 million. The marketing department predicts that sales related to the project will be $2.5 million per year for the next four years, after which the market will cease to exist. The machine will be depreciated down to zero over its four-year economic life using the straight-line method. Cost of goods sold and operating expenses related to the project are predicted to be 25 percent of sales. Howell also needs to add net working capital of $150,000 immediately. The additional net working capital will be recovered in full at the end of the project's life. The corporate tax rate is 35 percent. The required rate of return for Howell is 16 percent. Should Howell proceed with the project?

Chapter 7

Question 1

Financial Break-even L.J.'s Toys Inc. just purchased a $390,000 machine to produce toy cars. The machine will be fully depreciated by the straight-line method over its five-year economic life. Each toy sells for $25. The variable cost per toy is $11, and the firm incurs fixed costs of $280,000 each year. The corporate tax rate for the company is 34 percent. The appropriate discount rate is 12 percent. What is the financial break-even point for the project?

Question 2

Sensitivity Analysis Consider a four-year project with the following information: Initial fixed asset investment = $480,000; straight-line depreciation to zero over the four-year life; zero salvage value; price = $37; variable costs = $23; fixed costs = $195,000; quantity sold = 90,000 units; tax rate = 34 percent. How sensitive is OCF to changes in quantity sold?

Question 3

Break-Even Point As a shareholder of a firm that is contemplating a new project, would you be more concerned with the accounting break-even point, the cash break-even point (the point at which operating cash flow is zero), or the financial break-even point? Why?

Question 4

Option to Wait Your company is deciding whether to invest in a new machine. The new machine will increase cash flow by $475,000 per year. You believe the technology used in the machine has a 10-year life; in other words, no matter when you purchase the machine, it will be obsolete 10 years from today. The machine is currently priced at $2,900,000. The cost of the machine will decline by $210,000 per year until it reaches $2,270,000, where it will remain. If your required return is 9 percent, should you purchase the machine? If so, when should you purchase it?

Chapter 8

Question 1

Valuing Bonds Microhard has issued a bond with the following characteristics:
Par: $1,000
Time to maturity: 15 years
Coupon rate: 7 percent
Semiannual payments

Calculate the price of this bond if the YTM is:

a. 7 percent
b. 9 percent
c. 5 percent

Question 2

Calculating Real Rates of Return If Treasury bills are currently paying 4.5 percent and the inflation rate is 2.1 percent, what is the approximate real rate of interest? The exact real rate?

Question 3

Interest Rate Risk Laurel, Inc., and Hardy Corp. both have 7 percent coupon bonds outstanding, with semiannual interest payments, and both are priced at par value. The Laurel, Inc., bond has 2 years to maturity, whereas the Hardy Corp. bond has 15 years to maturity. If interest rates suddenly rise by 2 percent, what is the percentage change in the price of these bonds? If interest rates were to suddenly fall by 2 percent instead, what would the percentage change in the price of these bonds be then? Illustrate your answers by graphing bond prices versus YTM. What does this problem tell you about the interest rate risk of longer-term bonds?

Question 4

Valuing Bonds What is the price of a 15-year, zero coupon bond paying $1,000 at maturity if the YTM is:

a. 5 percent?
b. 10 percent?
c. 15 percent?

Chapter 9

Question 1

Stock Values The Starr Co. just paid a dividend of $2.15 per share on its stock. The dividends are expected to grow at a constant rate of 5 percent per year, indefinitely. If investors require a return of 11 percent on the stock, what is the current price? What will the price be in three years? In 15 years?

Question 2

Valuing Preferred Stock Ayden, Inc., has an issue of preferred stock outstanding that pays a $5.90 dividend every year, in perpetuity. If this issue currently sells for $87 per share, what is the required return?

Question 3

Nonconstant Growth Metallica Bearings, Inc., is a young start-up company. No dividends will be paid on the stock over the next nine years, because the firm needs to plow back its earnings to fuel growth. The company will pay a $15 per share dividend in 10 years and will increase the dividend by 5.5 percent per year thereafter. If the required return on this stock is 13 percent, what is the current share price?

Question 4

Differential Growth Janicek Corp. is experiencing rapid growth. Dividends are expected to grow at 30 percent per year during the next three years, 18 percent over the following year, and then 8 percent per year indefinitely. The required return on this stock is 11 percent, and the stock currently sells for $65 per share. What is the projected dividend for the coming year?

Question 5

Negative Growth Antiques R Us is a mature manufacturing firm. The company just paid a dividend of $9, but management expects to reduce the payout by 4 percent per year, indefinitely. If you require an 11 percent return on this stock, what will you pay for a share today?