Print Last Name: ➔	**Print First Name:** ➔	**ID Number:** ➔	
COURSE FINANCE	**NUMBER** COMM 308	**SECTIONS: (➔ Circle your section)** CC, DD, G, H, I, J	
EXAMINATION Final Exam **VERSION BLUE**	**DATE** April 22, 2013	**TIME** 3 hours	**# OF PAGES 17** including cover
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READ THESE SPECIAL INSTRUCTIONS CAREFULLY

- You must submit a BLUE computer answer sheet.

- You are allowed to bring/use one or more calculators

- You are allowed to bring one language dictionary (no finance/ mathematics/economics etc. dictionary)

- For Multiple Choice Questions: All answers must be recorded IN PENCIL on the computer sheet.

- For Problems:

All answers must be recorded IN INK within this exam.
Show your calculations to earn part marks. Write in the space provided.
If you are using the back of the exam for answering any question, you should label it clearly

- Please ensure you have 17 pages (including the cover page) in this exam.

- Fill in your name and other required information IN PENCIL on the Computer Answer sheet as well as IN INK on this cover sheet.

- Blank questions or those with multiple answers will not receive any credit.

SCORES (FOR INTERNAL USE ONLY)

Part I Multiple Choice Questions	**Part II Long Answer Questions**				
	Question 1	Question 2	Question 3	Question 4	
(Max: 70 Points)	(Max: 9 Points)	(Max: 5 Points)	(Max: 10 Points)	(Max: 6 Points)	**Total**

Part I: Multiple Choice Questions (28 Questions, 70 Points Total):

- This part consists of 28 Multiple Choice Questions.
- Each question is worth 2.5 points for a total of 70 points.
  - **Only answers on the computer answer sheet will be graded.**
  - **Use a pencil to mark your answers on the Computer Sheet.**

1. Agency costs refer to:

   A. The cost of operating a subsidiary corporation.
   B. The costs that result from default and bankruptcy of the firm.
   C. Corporate income subject to double taxation.
   D. The costs of the conflict of interest between stockholders and management.
   E. The total interest paid to creditors over the lifetime of the firm.

2. You are choosing between loans offered by two different banks. One charges an interest of 9% for three years using simple interest (i.e. 3% per year) while the other charges an interest of 9% for three years using compound interest. You should:

   A. You are indifferent between the two if the compounding is every three years.
   B. Choose the simple interest if the compounding period is less than three years.
   C. Choose the compound interest if the compounding period is less than three years.
   D. Both A and B are correct choices.
   E. Both A and C are correct choices.

3. Fresh out of college, you are negotiating with your prospective new employer. They offer you a signing bonus of $200,000 today or a lump sum payment of $250,000 three years from now. If you can earn 7% (EAR) on your invested funds, which of the following is true?

   A. Take the signing bonus because money received right now is always more valuable than money received in the future.
   B. Take the signing bonus because it has the higher future value.
   C. Take the lump sum because it is more than the signing bonus.
   D. Take the lump sum because it has higher present value.
   E. Based on these numbers, you are indifferent between the two.

4. Jack borrowed $42,000 and bought a new Volvo 850 GLT. The loan required six equal, end-of-year payment, at an interest rate of 6% APR compounded annually. Immediately after making his third payment, Jack gets an offer of $30,000 for the car. If he accepts the offer, and repays the balance on the loan, how much of the $30,000 does Jack have left?

    A. $8,753.84
    B. $12,000.00
    C. $9,000.00
    D. $7,169.19
    E. $6978.98

5. If you can earn 5% (EAR) on your invested funds, how long do you have to wait in order to earn a return of 150%?

    A. 6.58 years.
    B. 8.42 years.
    C. 14.58 years.
    D. 18.78 years.
    E. 50 years.

6. 10 years ago an account was opened with $1,000. Today, the account balance is $1,500. If the account paid interest compounded annually, how much interest on interest was earned?

    A. $86.20
    B. $93.10
    C. $102.39.
    D. $130.28.
    E. $500.00.

7. The stated interest payment, in dollars, made on a bond each period is called the bond's:

    A. Coupon
    B. Yield to maturity
    C. Face value
    D. Return on investment
    E. Both B and D

8. The written, legally binding agreement between the corporate borrower and the lender detailing the terms of a bond issue is called the:

    A. Debenture
    B. Indenture
    C. Venture
    D. Denture
    E. Covenant

9. A bond sold five weeks ago for $1,100. The bond is worth $1,050 in today's market. Assuming no changes in risk, which of the following is true?

    A. The face value of the bond must be $1100.
    B. The bond must be within one year of maturity.
    C. Interest rates must be lower now than they were five weeks ago.
    D. The bond's current yield has increased from five weeks ago.
    E. Insufficient information for answering the question.

10. As illustrated using the dividend growth model, the total return on a share of common stock is comprised of a _____.

    A. capital gains yield and a dividend growth rate.
    B. capital gains growth rate and a dividend growth rate.
    C. dividend payout ratio and a required rate of return.
    D. dividend yield and the present dividend.
    E. dividend yield and capital gains yield.

11. ABC Corporation's common shares are selling for $20 each in the market. The Company's earnings are expected to be $7.5 million next year and the required return on ABC common shares is estimated to be 10%. The firm currently has 5 million shares outstanding. What is the present value of growth opportunities per share? *Assume that ABC is 100% common stock financed firm (zero debt and zero preferred shares).*

    A. $1.50
    B. $5.00
    C. $6.80
    D. $7.00
    E. None of the above.

12. Which of the following calculations takes the time value of money into account?

I. Payback period
II. Discounted Payback period
III. Profitability Index
IV. NPV
V. IRR

A. II and IV only.

B. II, III, and IV only.

C. II, III, IV, and V only.

D. II, III, and V only.

E. I, II, III, IV, and V.

13. The use of which of the following could lead to incorrect decisions when comparing mutually exclusive investments? *Assume each of the projects have the same economic lives.*

I. IRR
II. Profitability Index
III. NPV

A. I only.

B. I, and II only.

C. II, and, III only.

D. I, and, III only.

E. I, II, and, III.

14. Your firm needs to buy a metal stamping press. The CFO presents you with two analyses: one for a press that is automated, requiring little labor to operate; and another that is manual, requiring a significant amount of labor. This is an example of a decision involving _____.

A. independent projects.

B. working capital projects.

C. positive NPV projects.

D. crossover projects

E. mutually exclusive projects.

15. Which of the following is more likely to be responsible for a firm having low present value of growth opportunities (PVGO)?

    A. ROE exceeds required return.
    B. Plowback is very high.
    C. Payout is very high.
    D. Book value of equity is low.
    E. None of the above.

16. You have a choice between 2 mutually exclusive investments A and B. What is the crossover rate for these two projects?

Project	Year 0	Year 1	Year 2	Year 3
A	-$200	$100	$100	$100
B	-$300	$125	$150	$125

    A. 0%
    B. 10%
    C. 16%
    D. 19.62%
    E. 23%

17. What proportion of a firm is equity financed if the weighted average cost of capital (WACC) is 14%, the after tax cost of debt is 7%, the tax rate is 35%, and the required return on equity is 18%?

    A. 54.00%
    B. 63.64%
    C. 70.26%
    D. 77.78%
    E. None of the above

18. A firm purchases Class 8 equipment for $1,000,000 (CCA Rate 20%) for a 10 year project. What will be the CCA tax shield in year 3? The tax rate is 35%.

    A. $201,600
    B. $144,000
    C. $63,000
    D. $50,400
    E. $35,000

19. For project Z, year-5 inventories increase by $6,000, accounts receivable increased by $4,000 and accounts payable increased by $3,000. Calculate the increase or decrease in year-5 cash-flow due to the change in net working capital.

    A. Decreases by $6,000.
    B. Increases by $4,000.
    C. Decreases by $7,000.
    D. Increases by $7,000.
    E. Increase by $13,000.

20. Consider three 30-year Government of Canada bonds with annual coupon payments. One bond has a 10% coupon rate, one has a 5% coupon rate and one has 3% coupon rate. The yield to maturity of each bond is 5% and the risk free rate is 2%. The market return is expected to be 7% and the expected market volatility is 2.5%. Which of the following statements is correct?

    A. The 10% coupon bond trades at a discount.
    B. The 5% coupon bond trades at a discount.
    C. The 3% coupon bond trades at a discount.
    D. All three bonds trade at a discount.
    E. None of the above choices are correct.

21. The capital structure weights used in computing the weighted average cost of capital:

    A. are based on the book values of total debt and total equity.
    B. are based on the market value of the firm's debt and equity securities.
    C. are computed using the book value of the long-term debt and the book value of equity.
    D. remain constant over time unless the firm issues new securities.
    E. are restricted to the firm's debt and common stock.

22. Investors are willing to purchase stocks having high P/E ratios because:

A. They expect these shares to sell for a lower price

B. They expect these shares to offer higher dividend payments.

C. They expect these stocks to have lower volatility

D. They expect these shares to have guaranteed earnings

E. They expect these shares to have greater growth opportunities.

23. The market risk premium is:

I. The slope of the security market line.
II. The percentage of the portfolio consisting of risk-free assets divided by the percentage of the portfolio consisting of risky assets.
III. The difference between the expected rate of return from the market portfolio and the expected rate of return from the risk-free asset.

A. I only

B. II only

C. III only

D. I and III only

E. II and III only

24. An investor invests $800 in a risky asset with an expected rate of return of 18% and a standard deviation of 25%. The investor also invests $200 in a Treasury bill with a 4% rate of return. Her portfolio's expected rate of return and standard deviation are _____and _____, respectively.

A. 14.4%; 20.0%

B. 18.4%; 20.8%

C. 15.2%; 20.0%

D. 15.2%; 44.7%

E. Insufficient information.

25. What is the Sharpe ratio of a portfolio that has an expected annual return of 11% and variance of 0.0289. Prevailing risk free rate in the market is 4% and the beta of the asset is 1.2

A. 0.058

B. 0.092

C. 0.412

D. 2.42

E. 3.81

26. The risk-free rate, RF, is 6% and the market risk premium is 5%. Assume that required returns are based on the CAPM. Your $1 million portfolio consists of $700,000 invested in a stock that has a beta of 1.2 and $300,000 invested in a stock that has a beta of 0.8. Which of the following statement is most correct?

    A. The portfolio's required return is less than 11%.

    B. If RF remains unchanged, but the market risk premium increases by 2%, the required return on your portfolio will increase by more than 2%.

    C. If the market risk premium remains unchanged, but the risk free rate increases by 2%, the required return on your portfolio will increase by more than 2%.

    D. If the stock market is efficient, your portfolio's expected return should equal the expected return on the market, which is 11%.

    E. None of the above statement is correct.

27. In a portfolio of three different stocks, which of the following could never be true? *(Assume no short positions in the portfolio).*

    A. The riskiness of the portfolio is less than the riskiness of each of the stocks.

    B. The riskiness of the portfolio is greater than the riskiness of one or two of the constituent stocks.

    C. The beta of the portfolio is less than the beta of each of the individual stocks.

    D. The beta of the portfolio is greater than the beta of one or two of the individual stocks.

    E. None of the above (That is, they could all be true, but not necessarily at the same time).

28. In the capital asset pricing model, if β of a stock is greater than 1 then:

    A. The rate of return on an individual stock is less volatile than the rate of return on a total stock market portfolio.

    B. The rate of return on an individual stock is more volatile than the rate of return on a total stock market portfolio.

    C. The rate of return on an individual stock is as volatile than the rate of return on a total stock market portfolio.

    D. The required rate of return on a stock the same as the rate of return on the total stock market portfolio.

    E. The required rate of return on a stock is less than the rate of return on the total stock market portfolio.

Part II: Problems (30 Points Total)

- Answer on this document, in the space provided. Use the back of the sheet if you need additional space. Label it clearly. Any work on the back of the sheet, which is not labeled clearly, will not be graded.
- Show all your work. Unsupported statements or numbers will not receive any credit.

Q1. (9 Points) Risk, Return and Portfolio Theory:

You currently own shares in Buckeye Mutual Fund (BMF). Your broker calls and recommends buying shares in a small-capitalization fund managed by Wolverine Investment Group (WIG). Your broker says that this fund will provide significant diversification benefits for your existing holdings. She gives you the following statistics based on the performance of the two funds over the last year.

Portfolio	E(Return)	Variance.
Buckeye Mutual Fund	20%	0.0196
Wolverine Investment Grp.	12%	0.0121

Q1 Part a) (3 Points) Assume that you can earn an average annual return of 8% on a risk-free security. The correlation between BMF and WIG returns is 0.00154, and the expected return on the market portfolio is 7%. Market volatility is expected to be 6%.
Which of these funds would be the optimal fund to combine with the risk-free security? Why?

Q1 Part b) (2 Points) Assume that you have decided to invest in a combination of the BMF and the risk free asset. What fraction of your wealth should be invested in the BMF so that your portfolio earns a target return of 22%?

Q1 Part c) (4 Points) Assume the covariance between BMF and WIG is 0.00154. What would be the average annual return and standard deviation of your portfolio if you placed 60% of your investment in Buckeye and 40% of your investment in Wolverine?

Q2. (5 Points) Equity valuation

Three years ago a company issued a new stock GamaX with a dividend of $4.5 per share. Today the public affairs advisor of the company announced that the company is expected to have three periods of growth to come. From today to year four the growth rate will be 3%, after that the growth rate will be 2.5% for three years, then the growth rate will stabilize at a constant rate of 1.5% thereafter. A reporter (who is also a stock holder of the firm) asked: "So what would we expect the dividend amounts to be in eight years?" The public affairs advisors answered: Our expected dividend for year eight is $6.78 per share. The applicable discount rate is 18%.

Q2 Part a) (1 Point) What is the price of the stock seven years from today?

Q2 Part b) (4 Point) What was the growth rate from the date of issuance till today?

Q3. (10 Points)

Your Friends Tania and Lu are holding a combination of options as part of their trading strategies.

Tania: Purchased a call option with strike price $50 and she wrote a call option with strike price $70.
Lu: Purchased a put option with strike price $70 and he wrote a put option with strike price $50.

Q3 Part a) (4 Points) Using the table below, calculate the payoffs of Tania and Lu:

Tania:

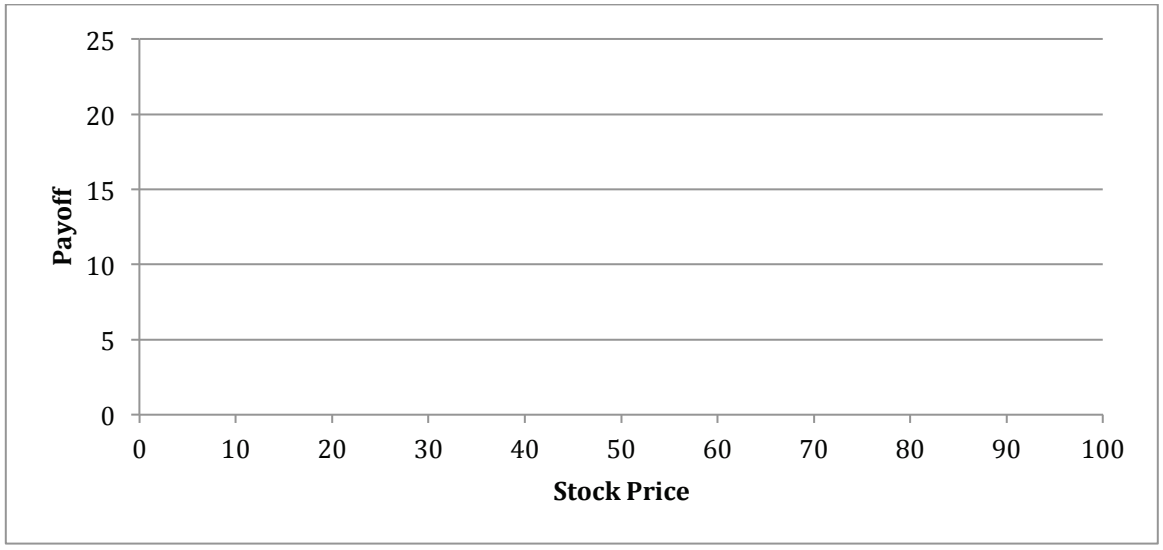
	Payoff		
Stock price	Purchased Call	Written Call	Total Payoff
0			
10			
20			
30			
40			
50			
60			
70			
80			
90			
100			

Lu:

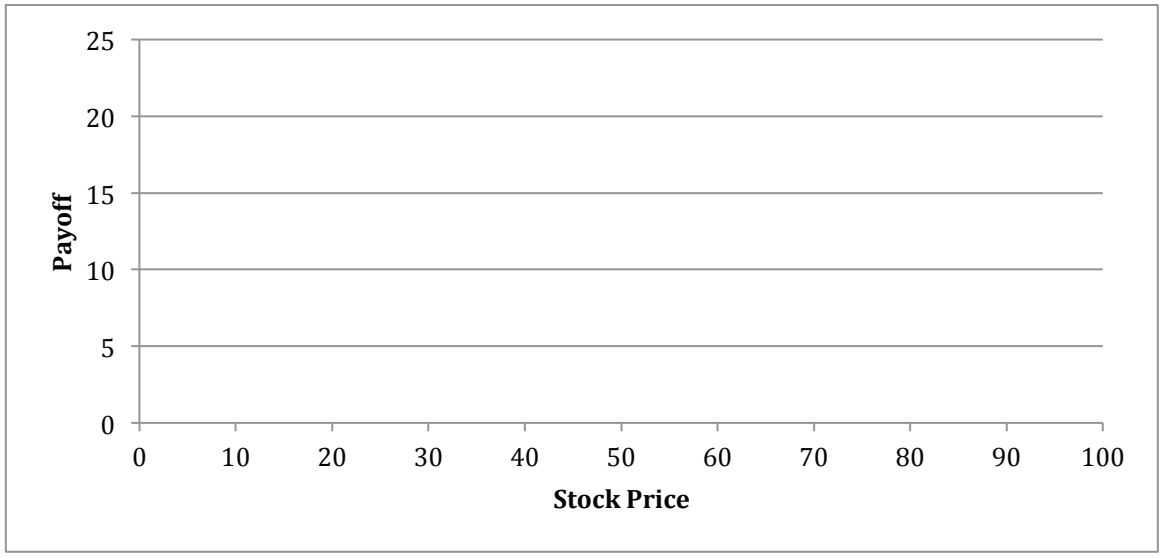
	Payoff		
Stock price	Purchased Put	Written Put	Total Payoff
0			
10			
20			
30			
40			
50			
60			
70			
80			
90			
100			

Q3 Part b) (4 Points) Draw the Payoff of Tania's and Lu's portfolio on the graph shown below

Tania:



Lu:



Q3 Part c) (2 Points) Which of the above combinations of securities holdings (Lu's or Tania's) constitute(s) a betting on increase in stock prices (betting that it will be a Bull market)? Why?

Q4. (6 Points) Short Answer:

You know that academic view is that financial markets (at least in the U.S.) are semistrong form efficient. But you also know that not everyone agrees on this, and you want to gauge the opinions of other people. For each person below, state whether he/she believes or does not believe in weak/semi-strong/strong form market efficiency. Explain your reasoning. (2 pts each)

a) Your friendly Starbucks barista: "I think that it's pretty hard to earn higher returns than the market, unless you have some inside information."

b) Your stock broker: "I go through all of the financial statements, analyst reports and business news that pertain to public companies. Because of this, I can earn higher returns than the market."

c) Your uncle: "I find it hard to believe that anyone could consistently beat the market, even if they had insider knowledge."

Equation List - Comm 308 - Booth-Cleary Text

5.3	Present Value of FV_n : $PV_0 = \frac{FV_n}{(1+k)^n}$
5.4	Future value of an annuity: $FV_n = \frac{PMT}{k}\left[(1+k)^n - 1\right]$
5.5	Present Value of an annuity: $PV_n = \frac{PMT}{k}\left[1 - \frac{1}{(1+k)^n}\right]$
5.8	Present value of perpetuity: $PV_0 = \frac{PMT}{k}$
5.10	Effective rate with continuous compounding: $k = e^{QR} - 1$
5.11	Effective rate: $k = \left(1 + \frac{QR}{m}\right)^{\frac{m}{f}} - 1$
5A-2	Present value of growing perpetuity: $PV_0 = \frac{PMT_0(1+g)}{k-g} = \frac{PMT_1}{k-g}$
5A-4	Present value of growing annuity: $PV_0 = \frac{PMT_1}{k-g}\left[1 - \left(\frac{1+g}{1+k}\right)^n\right]$
6.3	Current Yield: $CY = \frac{Annual\ Interest}{B}$
6.6	Price of T-Bill given BEY: $P = \frac{F}{\left(1 + k_{BEY} \times \frac{n}{365}\right)}$
7.10	Share price with growth opportunities: $P_0 = \frac{EPS_1}{k_c} + PVGO$
7.11	Growth rate: $g = b * ROE$
8.3	Total return = Income yield + Capital gain (loss) yield = $\frac{CF_1}{P_0} + \frac{P_1 - P_0}{P_0}$
8.5	Geometric average (GM) $= \left[(1+r_1)(1+r_2)(1+r_3)\times(1+r_n)\right]^{1/n} - 1 = \left(\prod_{i=1}^{n}(1+r_i)\right)^{\frac{1}{n}} - 1$
8.6	Expected return: $ER = \sum_{i=1}^{n}\left(r_i * \text{Prob}_i\right)$
8.7	Ex-post $\sigma = \sqrt{\frac{\sum_{i=1}^{n}\left(r_i - \bar{r}\right)^2}{n-1}}$
8.8	Ex-ante $\sigma = \sqrt{\sum_{i=1}^{n}\left(\text{Prob}_i\right)\left(r_i - ER\right)^2}$
8.9	Expected portfolio return: $ER_p = \sum_{i=1}^{n}\left(w_i * ER_i\right)$
8.11	Portfolio standard deviation: $\sigma_P = \sqrt{\left(w_A\right)^2\left(\sigma_A\right)^2 + \left(w_B\right)^2\left(\sigma_B\right)^2 + 2\left(w_A\right)\left(w_B\right)\left(COV_{A,B}\right)}$
8.12	$COV_{A,B} = \sum_{i=1}^{n}\text{Prob}_i(r_{A,i} - \bar{r_a})(r_{B,i} - \bar{r_b})$

8.14	$COV_{AB} = \rho_{AB}\sigma_A\sigma_B$
8.16	If $\rho_{AB} = -1$, then: $\sigma_P = w\sigma_A - (1-w)\sigma_B$
9.3	$E(R_P) = RF + \left(\frac{E(R_A) - RF}{\sigma_A}\right)\sigma_P$
9.4	Slope of CML $= \frac{ER_M - RF}{\sigma_M}$
9.6	Sharpe Ratio $= \frac{ER_P - RF}{\sigma_P}$
9.7	$\beta_i = \frac{Cov_{i,M}}{\sigma_M^2} = \frac{\rho_{i,M}\sigma_i}{\sigma_M}$
9.8	$\beta_P = w_A\beta_A + w_B\beta_B + \ldots + w_n\beta_n$
9.9	$k_i = RF + (ER_M - RF)\beta_i$
12.2	*Option* Premium $= IV + TV$
12.5	Put Call Parity: $P + S = C + PV(X)$
13.1	$NPV = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \frac{CF_3}{(1+k)^3} + \mathsf{K} + \frac{CF_n}{(1+k)^n} - CF_0 = \sum_{t=1}^{n}\frac{CF_t}{(1+k)^t} - CF_0$
13.3	$PI = \frac{PV(Cash \text{ inflows})}{PV(Cash \text{ outflows})}$
14.1	$CF_0 = C_0 + \Delta NWC_0 + OC$
14.2	$CF_t = CFBT_t(1-T) + CCA_t(T)$
14.4	$ECF_n = SV_n + \Delta NWC_n$
14.5	$NPV = PV(CF_t) + PV(ECF_n) - CF_0$
14.6	$PV(Operating\ Cash\ Flows) = \frac{CFBT(1-T)}{k}\left[1 - \frac{1}{(1+k)^n}\right]$
14.7	$PV(CCA\ Tax\ Shield) = \frac{(C_0)(d)(T)}{d+k} * \frac{(1+0.5k)}{(1+k)} - \frac{(SV_n)(d)(T)}{d+k} * \frac{1}{(1+k)^n}$
20.8	Cost of Capital: $K_a = \frac{ROI \times IC}{V} = \frac{K_e S + K_d(1-T)D}{V} = K_e\frac{S}{V} + K_d(1-T)\frac{D}{V}$
20.9	$WACC = K_e\frac{S}{V} + K_p\frac{P}{V} + K_i\frac{D}{V}$, Where: $K_i = K_d(1-T)$
20.10	Market value: $S = P_0 \times n$
20.13	Net proceeds: $NP = \frac{I(1-T)}{K_i}\left[1 - \frac{1}{(1+K_i)^n}\right] + F\left(\frac{1}{(1+K_i)^n}\right)$
20.14	Cost of preferred shares: $K_p = D_p \Big/ NP$
20.17	$K_{ne} = \frac{D_1}{NP} + g$
20.21	$K_e = \frac{D_1}{P_0} + g = \frac{X_1(1-b)}{P_0} + b * ROE$
20.27	Cost of new equity: $K_{ne} = K_e * \frac{P_0}{NP}$