Print Last Name: ➔	Print First Name: ➔	ID Number: ➔	
COURSE FINANCE	**NUMBER** COMM 308	**SECTIONS: (➔ Circle your section)** CC, DD, F, G, H, I	
EXAMINATION Final Exam **VERSION BLUE**	**DATE** April 14, 2011	**TIME** 3 hours 19:00 – 22:00	**# OF PAGES 18** including cover
INSTRUCTOR: **(➔ Underline your instructor's name)** Nabil El Meslmani Ravi Mateti Reena Atanasiadis David Newton Stephen Wong		**DIVISION** John Molson School of Business Concordia University	

READ THESE SPECIAL INSTRUCTIONS CAREFULLY

- **You must submit a BLUE computer answer sheet.**

- **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 18 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 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: 7 Points)	(Max: 11 Points)	(Max: 6 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 counts 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. Which of the following help ensure managers act in the best interest of owners?
   I. Compensation package for managers that ties their salary to the firm's share price.
   II. Managers are promoted only if the firm prospers.
   III. The threat that if the firm does poorly, shareholders will use a proxy fight to replace the existing management.
   IV. There is a high degree of likelihood the firm will become a takeover candidate if the firm performs poorly.

   A) I and II only
   B) II and III only
   C) I, III, and IV only
   D) I, II, and III only
   E) I, II, III, and IV

2. A firm has recently purchased Class 10 equipment for $100,000 with a CCA rate of 30%. What is the amount of depreciation that the firm can claim as a tax-deductible expense in the second year?

   A) $30,000
   B) $15,000
   C) $42,000
   D) $25,500
   E) $45,000

$$year1: \frac{1}{2} \times 0.3 \times 100,000 = \$15,000$$
$$year2: 0.3 \times (100,000 - 15,000) = \$25,500$$

3. James plans on saving money to buy his dream car. He is opening an account today with a deposit of $15,000 and expects to earn 4% interest (effective annual rate). After 3 years, he will add an additional $50,000 to the account. If the account continues to earn 4% EAR, how much money will James have in his account five years from now?

   A) $65,000.00
   B) $67,600.00
   C) $72,000.00
   D) $72,329.79
   E) $79,082.44

Future Value of $15,000 after t=5, k=4%
+ Future Value of $50,000 after t=2, k=4%
$15,000 \times 1.04^5 + 50,000 \times 1.04^2 = \$72,329.79$

4. Simpsons, Inc. invested $1.325 million in a project that earned an 8.25% rate of return (effective annual rate). Sampson sold their investment for $3,713,459. How much sooner could Simpsons have sold the company if they only wanted $3 million from the project?

A) 2.69 years
B) 3.33 years
C) 5.17 years
D) 6.67 years
E) 10.31 years

Calculate time needed to increase 3 mill to 3.713459 mill with k =8.25%

$3 \times 1.0825^{t} = 3.713459$

$\therefore t = \frac{\ln(3.713459) - \ln(3)}{\ln(1.0825)} = 2.69$ *years*

5. The greater the number of years, the:

A) Smaller the future value of a single sum.
B) Larger the present value of a single sum.
C) Greater the compounding effect.
D) None of the above.
E) Insufficient information.

6. XYZ shares are selling for $55.00. The 2 year put option on XYZ shares has the following characteristics: strike = 50, price = $0.25. Given that the risk free rate is 2%, what is the price of a 2 year call option on XYZ shares with an exercise price of 50?

A) 5.25
B) 7.19
C) -4.75
D) $0.25
E) 0

$P + S = C + X * (1 + k)^{-t}$

$0.25 + 55 = C + 50 * 1.02^{-2}$

$C = \$7.19$

7. Jack and Jill both want to have $5,000 in three years. Jack expects to earn 8% on his investments and Jill expects a 7% rate of return. Which one of the following statements is correct concerning the amount of money they each need to invest today?

A) Jill needs to deposit $112.33 more than Jack today.
B) Jill needs to deposit $173.33 more than Jack today.
C) Jack needs to deposit $3,699.16 today.
D) Jill needs to deposit $3,081.49 today.
E) Both Jack and Jill should deposit $3,969.16 today.

Let x be Jack's investment

Let y be Jill's investment

$x - y = 5000 \times (1.08^{-3} - 1.07^{-3}) = -112.33$

8. You own a furniture store. You normally sell a living room set for $2,500 and finance the full purchase price for 30 monthly payments at 24% APR (compounded monthly). You are planning to run a zero-interest financing sale during which you will finance the set over 30 months at 0% interest. What should be your selling price during the zero-interest financing sale such that you are able to earn your usual combined return on the sale and the financing? Assume all payments are made at the end of the month.

A) $ 2,500.00
B) $ 3,100.00
C) $ 3348.74
D) $4528.41
E) $128.43

Price should e such that the monthly payment should not change

$$PMT = 2500 \times 0.02 \times \left[1 - \frac{1}{1.02^{30}}\right]^{-1} = \$111.6248$$

$$\therefore New \text{ price(with 0\%)} = 30 \times 111.6248 = \$3348.74$$

9. Strapped for cash, your acquaintance Mr. John Doe makes you the following offer. He would like to borrow $10,000 today. He will repay the $10,000 by making yearly payments with the first payment being for $1,000 at the end of this year. The payments will grow by 10% every year thereafter. If the appropriate discount rate is 12% (effective annual rate), how long will it take for Mr. Doe to repay the loan?

A) 12.38 years
B) 10 years
C) 13.28 years
D) 18.32 years
E) 21.38 years

$$10,000 = \frac{1000}{0.12 - 0.1} \times \left(1 - \left(\frac{1.1}{1.12}\right)^{n}\right)$$

$$\therefore n = 12.38 \; years$$

10. Given a fixed stream of monthly income the:

A) Present value will increase as the time period increases.
B) Future value will decrease as the time period increases.
C) Present value will decrease as the annual percentage rate decreases.
D) Future value will increase as the annual percentage rate decreases.
E) Future value will increase if payments are made at the end of the period rather than the beginning.

11. Thomas wants to save $1,200 a year in a manner that maximizes his savings. To do this, he should:

A) Deposit $1,200 into his savings account on the last day of each year.
B) Treat his $100 monthly savings deposits as an annuity due.
C) Treat his $100 monthly savings deposits as an ordinary annuity.
D) Deposit $300 into his account at the end of each quarter.
E) Deposit $600 into his account at the end of every six month period.

12. Which of the following statements are correct concerning interest rate risk?

I. The shorter the term, the greater the interest rate risk.
II. The longer the term, the greater the interest rate risk.
III. The lower the coupon rate, the greater the interest rate risk.
IV. The higher the coupon rate, the higher the interest rate risk.

A) I and III only
B) I and IV only
C) II and III only
D) II and IV only
E) Insufficient Information.

13. Which of the following is (are) true concerning bond prices?

I. A discount bond will be priced closer and closer to face value as the time to maturity decreases, all else equal.
II. A premium bond will be priced closer and closer to face value as the time to maturity decreases, all else equal.
III. A bond's price reflects the bond's rating and time to maturity.
IV. A bond's price will decrease as interest rates increase.

A) I and IV only
B) II and III only
C) II and IV only
D) I, III, and IV only
E) I, II, III, and IV

14. Given no change in required returns, the price of a stock whose dividend is constant will:

A) Increase over time at a rate of r%.
B) Decrease over time at a rate of r%.
C) Increase over time at a rate equal to the dividend growth rate.
D) Decrease over time at a rate equal to the dividend growth rate.
E) Remain unchanged.

15. The Jane Doe Inc. bonds are currently selling for $1,003.17. These bonds mature in three years, pay coupons annually, and have a yield-to-maturity of 6.63%. What is the coupon rate?

A) 6.50%
B) 6.60%
C) 6.63%
D) 6.75%
E) 6.90%

$$1003.17 = \frac{C}{0.0663} \times \left(1 - \frac{1}{1.0663^3}\right) + \frac{1000}{1.0663^3}$$

$$C = \$67.499 \Rightarrow \textit{coupon rate} = 6.75\%$$

16. If two stocks have the same earnings per share and required rate of return, differences in the _____ of the two companies can account for different stock prices.

A) voting rights
B) growth opportunities
C) number of shares outstanding
D) number of directors
E) value of preferred stock

17. It is more difficult to value a stock than it is to value a bond because:
I. The future cash flows of equity are known.
II. Future cash flows of bonds are known
III. The life of an equity security is unlimited.
IV. The required market rate of return on a stock is known in advance.

A) I
B) II
C) I and III
D) II and III
E) II, III and IV

18. A company has a market-to-book ratio that is greater than 1.0. If this company uses book value of equity to determine their WACC, they will derive a value that is _____ the market based WACC. because _____

A) Equivalent to; the ratio of debt to equity is the same whether book values or market values are used.
B) Greater than; the ratio of debt to equity will be greater than if the ratio was based on market values.
C) Greater than; the ratio of debt to equity will be less than if the ratio was based on market values.
D) Less than: the ratio of debt to equity will be greater than if the ratio was based on market values.
E) Less than; the ratio of debt to equity will be less than if the ratio was based on market values.

$\because \frac{M}{B} > 1 \Rightarrow market\_value > Book\_value$

$\therefore Equity\ will\ be\ underestimated \Rightarrow \frac{D}{E} : \frac{D}{B} > \frac{D}{M}$

$\therefore$ Higher weight on cost of debt and lower weight on cost of eq

$\because$ cost of debt < cost of equity $\Rightarrow$ WACC will be lower

19. Deep Pockets Mining unexpectedly discovered an extremely rich vein of gold. Which of the following types of stakeholder owns the increased profits that will be generated from this find?

I. Preferred shareholders
II. Bond holders
III. Common shareholders

A) I only
B) II only
C) III only
D) I, and III only
E) I, II, and III

20. Suppose that sales and profits of Ollie Enterprises are growing at a rate of 30% per year. At the end of four years the growth rate will drop to a steady 4%. At the end of year 5, Ollie will issue its first dividend in the amount of $2 per share. If the required return is 16%, what is the value of a share of stock? Assume dividends grow at the same rate as earnings after year 4.

A) $7.49
B) $7.67
C) $8.17
D) $9.20
E) $9.91

$$Price = \frac{2}{0.16 - 0.04} \times \frac{1}{1.16^4} = \$9.20$$

21. The Battery Co. paid $1.20 in dividends last year. Last year Margaret paid a price of $15.00 a share for Battery Co. stock and she has an expected return of 8% on this investment. What is the growth rate of the Battery Co. stock?

A) 0%
B) 4%
C) 8%
D) 12%
E) 16%

$$15 = \frac{1.2 \times (1+g)}{0.08 - g} \Rightarrow g = 0$$

22. The internal rate of return on a project is 11.24%. Which of the following (is) are true if the project is assigned a 9.5% discount rate?

I The project will have a negative net present value.
II The profitability index will be greater than 1.0.
III The initial investment is less than the market value of the project.
IV The project will have a positive effect on shareholders if it is accepted.

A) I only
B) II and IV only
C) I and III only
D) II and III only
E) II, III, and IV only

23. If portfolio weights are positive: 1) Can the return on a portfolio ever be less than the smallest return on an individual security in the portfolio? 2) Can the variance of a portfolio ever be less than the smallest variance of an individual security in the portfolio?

A) 1) yes; 2) yes
B) 1) yes; 2) no
C) 1) no; 2) yes
D) 1) no; 2) no
E) 1) maybe; 2) no

24. Which of the following are examples of systematic risk?

I. An increase in the rate of GDP growth
II. An increase in the productivity of ABC Co. workers
III. A decrease in the rate of inflation
IV. A decrease in a firm's cost of borrowing

A) I and II only
B) I and III only
C) II and IV only
D) II and III only
E) I, III, and IV only

25. An asset that has an expected rate of return above the security market line:

A) Is overpriced.
B) Is underpriced.
C) Is less risky than the market.
D) Has a beta greater than 1.
E) Has a standard deviation equal to 0.

26. A firm is considering a project that is virtually risk-free. The company has a beta of 1.3 and a debt-equity ratio of .4. The appropriate discount rate to use in analyzing this project is:

A) The firm's current WACC.
B) Required rate of return based on a beta of 1.3.
C) The cost of equity capital.
D) The Treasury bill rate.
E) Zero.

27. An increase in which of the following will increase the value of a call option?

I. Underlying stock price
II. Exercise price
III. Time to expiration
IV. Variance of the return on the underlying asset

A) III and IV only
B) I and III only
C) II and IV only
D) I, III, and IV
E) I, II, III, and IV

28. You discover that you can make greater than expected returns by buying stock in firms whenever the growth rate in sales predicted by an investment survey exceeds the stock's current price-earnings ratio. Which of the following describes this event?

A) This would not be a violation of market efficiency.
B) This would be a violation of weak form efficiency.
C) This would be a violation of semi-strong form efficiency but not of weak form efficiency.
D) This would be a violation of strong form efficiency but not of semi-strong form efficiency.
E) This would be a violation of all forms of market efficiency.

Part II: Problems (30 Points Total)

- **Answer on this document, in the space provided.**
- Show all of your calculations.
- Write clearly! Part marks will be awarded (when deserved).

Q1: (7 Points)

Elbonia Mudworks capital structure is as follows:

Debt: 4,000 10-year, 8% semi-annual coupon bonds (4% coupon every 6 months) priced at par (face value = $1,000), Common stock: 50,000 shares outstanding, price = $62 and β = 1.1, Preferred stock: 9,000 shares of 4% preferred stock outstanding, price = $60 (face value = $100). Assume that the market premium is currently at 5% and the short-term government of Canada bills are yielding 6%

Elbonia is considering investing in a new project. The new project is similar in risk to the current operations of the firm. The project is for 4 years and it will require an investment of $100,000 in new equipment. The CCA rate is 25% and the tax rate is 35%. Elbonia's management has estimated the IRR of the new project to be 10%.

Should the firm accept the new project? Support your answer with calculations and/or reasoning.

Solution:

If required rate of return for the project is less than the estimated IRR, then accept the project

$$required\_rate\_of\_return = WACC = k_e \frac{S}{V} + k_p \frac{P}{V} + k_d \times (1-T) \frac{D}{V}$$

Bond prices are at par: $\therefore YTM = Coupon\_Rate = 8\%$

$$\therefore k_d = (1+0.04)^2 - 1 = 0.0816 = 8.16\%$$

Common stock: $k_e = k_f + \beta \times (k_m - k_f)$

$$= 0.06 + 1.1 \times 0.05 = 0.115 = 11.5\%$$

Preferred stock: $k_p = \frac{D}{P} = \frac{4}{60} = 0.06666 = 6.67\%$

Capital Structure:

$$D = 4,000 \times 1,000 = \$4,000,000$$
$$S = 50,000 \times 62 = \$3,100,000$$
$$P = 9,000 \times 60 = \$540,000$$
$$\therefore V = D + S + P = \$7,640,000$$

$$\therefore WACC = 0.115 \times \frac{3.1}{7.64} + 0.06667 \times \frac{0.54}{7.64} + 0.0816 \times (1-0.35) \times \frac{4}{7.64}$$
$$= 0.07914398 \cong 7.91\%$$

Estimated IRR is 10% which is greater than the WACC (which is 7.91%)

Therefore, accept the project.

Q2: (11 Points)

You are a recycler of spent plutonium rods from nuclear reactors, and a new government mandate requires you to purchase a filtration system for your wastewater. You can choose between two machines:

Machine 1 has a four-year life and costs 1,200,000. It has an annual pre-tax operating cost of $100,000 in the first year. Operating costs are expected to increase at a rate of 5% per year over the life of machine.

Machine 2 has a six-year life costs $720,000. It has an annual pre-tax operating cost of $80,000 in the first year. The operating costs for the second machine are expected to increase at the rate of 8% per year over the life of the machine.

You do not foresee any further changes in environmental laws or changes in water filtration technology. Both machines have zero salvage values. Both machines belong to CCA class 22 with a depreciation rate of 50%. The corporate tax rate is 34% and the appropriate discount rate is 12%.

a) (2.5 point) What is the NPV of investing in Machine 1?

$$NPV = -1,200,000 - \frac{100,000 \times (1-0.34)}{0.12-0.05}\left(1-\frac{1.05^4}{1.12^4}\right) + \frac{1,200,000 \times 0.5 \times 0.34}{0.12+0.5} \times \frac{1+0.5\times 0.12}{1.12} = -1,103,116.91$$

b) (2.5 point) What is the NPV of investing in Machine 2?

$$NPV = -720,000 - \frac{80,000 \times (1-0.34)}{0.12-0.08}\left(1 - \frac{1.08^6}{1.12^6}\right) + \frac{720,000 \times 0.5 \times 0.34}{0.12+0.5} \times \frac{1+0.5 \times 0.12}{1.12} = -791,929.59$$

c) (2 point) What is machine 1's EANPV?

$$-1{,}103{,}116.91 = \frac{EANPV_1}{0.12}\left(1 - \frac{1}{1.12^4}\right)$$
$$\Rightarrow EANPV_1 = -363{,}184.08$$

d) (2 point) What is machine 2's EANPV?

$$-791{,}929.59 = \frac{EANPV_2}{0.12}\left(1 - \frac{1}{1.12^6}\right)$$
$$\Rightarrow EANPV_2 = -192{,}617.64$$

e) (1 point) Which machine should you buy?

Choose Machine 2 (Less expensive per year)

f) (1 points) Do you need your results from c. and d. in order to answer question e? Why or why not?
No, because Machine 2 has lower cost (in terms of PV) and it has longer useful life.

Q3: (6 Points)

Important: when drawing payoff or profit diagrams, you need to show the location of each important point on the diagram by writing down the relevant numbers next to each point (i.e. indicate intersections with the horizontal and vertical axes and any points where the payoff/profit function changes abruptly).

Consider a portfolio composed of two options written on the same stock:

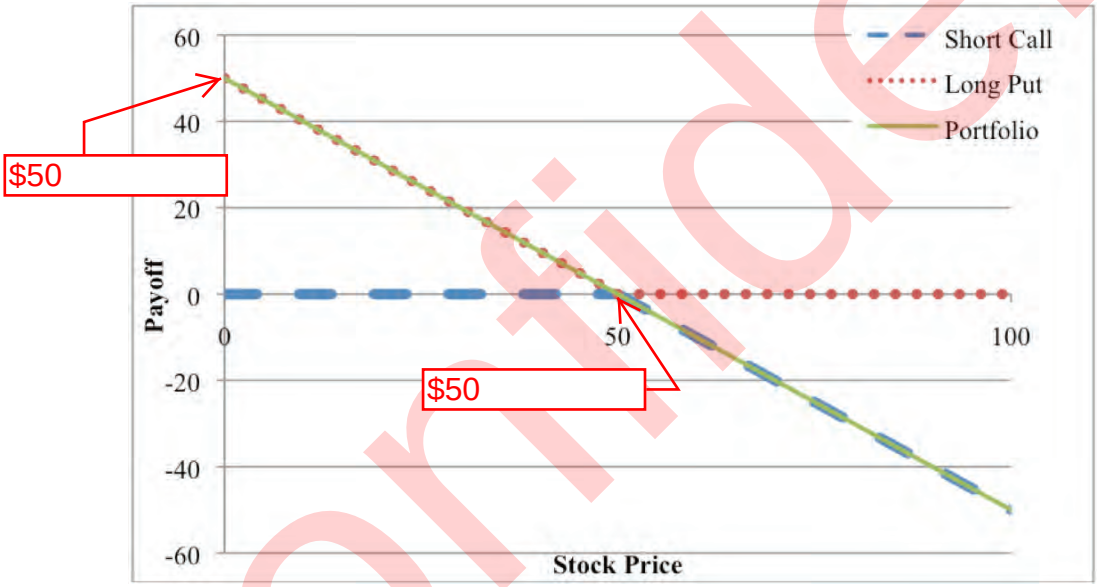
- Short one European call option with a strike price $50
- Long one European put option with a strike price $50

With both options maturing at date T.

a) (5 Points) What is the payoff of this portfolio at date T? Draw the payoff diagram.

Payoff matrix:

	Stock Price		
	0	50	80
Short Call	0	0	-30
Long Put	50	0	0
Portfolio	**50**	**0**	**-30**



b) (1 Point) Name one financial asset that has the same payoff as the above portfolio?

Short Stock

Q4: (6 Points) Short Answers:

a) (2 points) Suppose you own 100 shares of IBM stock, which you intend to sell today. Since you will sell it in the secondary market, IBM will receive no direct cash flows as a consequence of your sale. Why, then, should IBM's management care about the price you get for your shares?

Look for any two reasons

- Management are Often Shareholders Too
- Stock means ownership -- poor performance can lead to proxy fights or other moves to change management.
- Better performing stocks lead to availability of cheaper financing through a lower interest rate (cost of capital)
- Falling prices can make the company vulnerable to takeovers and acquisitions -- change of management
- Company may aim to increase share prices simply to increase their prestige -- ego booste for management.

b) (2 points) Since debt is typically a cheaper source of financing than is equity, why don't firms use as close to 100% debt financing as possible?

Student should mention the disadvantages of debt (any two):

- Bankruptcy Cost: Higher business risk --> Higher Cost
- Agency Cost: Greater the separation between stockholders & lenders --> Higher Cost
- Loss of Future Financing Flexibility: Greater the uncertainty about future financing needs --> Higher Cost

c) (2 points) Your friend argues that trading on insider information should be made legal because trading by insiders will make the market strong form efficient. Argue against this reasoning.

Student should bring out the problems related to insider trading:

If there are legal barriers to private information becoming public, as with insider trading laws, strong-form efficiency is impossible, except in the case where the laws are universally ignored.
However, there are some arguments against insider trading **(look for any two reasons)**:

- Increase asymmetry of information. This can potentially drive out non-insiders or uninformed traders because they will be always disadvantaged. This will reduce the investor base and make the market more illiquid
- Unequal (in-principle) access to information. This goes ethically against the principles of fair market.
- Counter to fiduciary duty: Insiders (read management) has the fiduciary duty to increase the shareholder's wealth. Allowing insider trading might lead to management working in their own interest at the cost of outsider shareholders.

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: $ER = \sum_{i=1}^{n}(r_i * \text{Prob}_i)$
8.7	Ex-post $\sigma = \sqrt{\frac{\sum_{i=1}^{n}(r_i - \bar{r})^2}{n-1}}$
8.8	Ex-ante $\sigma = \sqrt{\sum_{i=1}^{n}(\text{Prob}_i)(r_i - ER)^2}$
8.9	Expected portfolio return: $ER_p = \sum_{i=1}^{n}(w_i * ER_i)$
8.11	Portfolio standard deviation: $\sigma_P = \sqrt{(w_A)^2(\sigma_A)^2 + (w_B)^2(\sigma_B)^2 + 2(w_A)(w_B)(COV_{A,B})}$
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	$NPV = \frac{CF_1}{(1+k)^1} + \frac{CF_2}{(1+k)^2} + \frac{CF_3}{(1+k)^3} + .. + \frac{CF_n}{(1+k)^n} - CF_0 = \sum_{t=1}^{n}\frac{CF_t}{(1+k)^t} - CF_0$
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: $K_p = D_p / NP$
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: $K_{ne} = K_e * \frac{P_0}{NP}$