<u>Solution FILE (BLUE)</u>

<u>Very Important (READ THIS):</u>

All students with seven digit ID numbers must add "2" in front of their ID number to make it eight digit. For example:

ID # 6770177 should be made 26770177

You should put the eight-digit ID (26770177 in the above example) on both the exam and the bubble sheet.

Examination Cover Sheet

Print Family Name: ➔	**Print Given Name:** ➔	**ID Number:** ➔	
COURSE *FINANCE*	***NUMBER*** *COMM 308*	***SECTIONS: A ; AA ;B ; BB; C ; D ; F***	
EXAMINATION *Final Exam* ***VERSION BLUE***	***DATE*** *December 8th, 2016*	***TIME*** *3 hours* *14:00 to 17:00*	***# OF PAGES 16*** *Including this cover*
INSTRUCTOR: Circle your Professor Ian Rakita Azadeh Babaghaderi Jennifer Yang Moein Karami Wajeeh elali June Riley Raad Jassim		***DIVISION*** *John Molson School of Business* *Concordia University*	

INSTRUCTIONS: ***<u>Please read these carefully</u>***

1. *Please ensure you have <u>16 pages</u> (including this cover page) in this exam.*
2. *<u>For Part I of this exam (Multiple Choice Questions):</u> All answers must be recorded IN PENCIL on the computer sheet. Only the computer sheet will be graded.*
3. *<u>For Part II:</u> 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*
4. *<u>For Part II:</u> All answers must be recorded <u>IN INK</u> within this exam.*

MATERIALS ALLOWED:

1. *You must submit a <u>BLUE computer answer sheet</u>.*
2. *You are allowed to bring one or more calculators <u>(ENCS sticker not necessary)</u>*
3. *You are allowed to bring one language dictionary (no finance/ mathematics/economics etc. dictionary)*

Part I: Multiple Choice Questions (35 Questions, 70 Points Total):

- This part consists of 35 Multiple Choice Questions. Each question is worth 2 points.

- Only answers on the computer answer sheet will be graded.

- Use a pencil to mark your answers on the Computer Sheet.

1. Star Corporation has issued preferred shares to investors with a 5.5% annual dividend rate on a par value of $100. Assuming the firm pays dividends indefinitely, and the required rate of return is 12 percent, calculate the current price of the preferred share?

    A. 55.15
    B. 45.83
    C. 43.20
    D. 38.15

Solution: B

$$PV_0 = \frac{5.5}{0.12} = 45.83$$

2. Eaton Inc. has decided to increase its annual dividends by 5 percent a year for the next three years and there would be no growth of dividends thereafter (i.e., the dividends remain the same indefinitely, from t=3). The company just paid a dividend of $2 per share. What is the market value of Eaton Inc. stock, if the required rate of return is 11%?

    A. $18.1
    B. $21
    C. $23.5
    D. $35

Solution: C

$$D_1 = D_0 \times (1+g)^1 = 2 \times (1+0.05)^1 = 2.1$$

$$D_4 = D_0 \times (1+g)^3 = 2 \times (1+0.05)^3 = 2.315$$

$$PV_0 = \left[\frac{D_1}{k-g} * \left(1 - \left(\frac{1+g}{1+k}\right)^3\right)\right] + \left[\frac{D_4}{k} \times \frac{1}{(1+k)^3}\right] = \$23.55$$

3. Company A, just paid a dividend of $1.8 per share on its common stocks. The dividends are expected to grow at 4 percent per year indefinitely. What are the capital gain and dividend yield **(respectively)** that you realize, if you buy the stock today (right after D_0 was paid) and sell it one year from now (right after you receive D_1)? Assume that the required rate of return is 12%.

A. 4%, 8%
B. 10%, 4%
C. 4%, 12%
D. 6%, 6%

Solution: A

$$p_0 = \frac{1.8(1.04)}{0.12 - .04} = \$23.4$$
$$Total\ return = capital\ gain + dividend\ yield$$

$$Total\ return = \frac{p_1 - p_0}{p_0} + \frac{D_1}{p_0}$$
$$Capital\ gain = 4\%\ (g)$$
$$Dividend\ Yield = \frac{1.8(1.04)}{23.4} = 8\%$$

4. Assume that you have decided to invest in a combination of the Apple Inc. stocks with an expected return of 5 percent and the Risk-Free asset. The standard deviation of Apple Inc. stocks' returns is 10%. What fraction of your wealth should be invested in the risk-free asset, so that your portfolio will have a target standard deviation of 7 percent. The risk-free rate is 2 percent.

A. 70%
B. 75%
C. 30%
D. 25%

Solution: C

$$\sigma_{RF} = 0$$
$$\sigma_p = W_A \sigma_A$$
$$7\% = W_A \times 10\%$$
$$W_A = 70\% \rightarrow\ W_{RF} = 30\%$$

5. Which of the following sentences is true, assuming that all of the portfolio weights are positive?

A. The expected return of the portfolio can be less than the minimum expected return of individual stocks in the portfolio.
B. The variance of the portfolio is the weighted average of individual stocks' variances.
C. The variance of the portfolio can be less than the minimum variance of individual stocks in the portfolio.
D. The risk of the portfolio can never be less than the minimum risk of individual stocks in the portfolio.

Solution: C

6. Suppose you hold a diversified portfolio consisting of a $100 investment in each of 10 different common stocks. The portfolio's beta is 1.2. You decide to sell one of the stocks that has a beta of 1.5, and use the proceeds (i.e., $100) to buy a replacement stock with a beta of 0.9. What would be your new portfolio's beta?

   A. 1.12
   B. 1.14
   C. 1.18
   D. 1.21

Solution: B

$$\sum_{i=1}^{10} beta_i = 12$$

$$\sum_{i=1}^{9} beta_i = 12 - 1.5 = 10.5$$

$$\sum_{i=1}^{10} beta_{i(new)} = 10.5 + 0.9\% = 11.4$$

$$ER_{p(new)} = \frac{11.4}{10} = 1.14$$

7. Security A has an expected return of 8% and a standard deviation of 6%. Security B has an expected return of 10% and a standard deviation of 9%. The correlation coefficient between A and B is 1 (i.e., the two stocks are perfectly positively correlated). If the standard deviation of the portfolio consisting of security A and B is 7.6%, what fraction of the total money has been invested in <u>security B</u>? (Hint: $(a+b)^2 = a^2 + b^2 + 2ab$)

   A. 48.7%
   B. 50.5%
   C. 51.7%
   D. 53.4%

Solution: D

$$\rho = 1$$

$$\sigma_p = W_A\sigma_A + W_B\sigma_B$$

$$0.076 = w \times 0.06 + (1-w) \times 0.09$$

$$\rightarrow w = 46.6\% \rightarrow \ W_B = 1 - w = 53.4\%$$

8. What is the geometric mean of the following returns? 4%, 7%, -2%, 1.5%, -3%.

   A. 1.43%
   B. 1.85%
   C. 2.23%
   D. 2.85%

Solution: A

$$G - mean = (1.04 \times 1.07 \times 0.98 \times 1.015 \times 0.97)^{\frac{1}{5}} - 1 = 0.0143$$

9. A firm with a cost of capital (COC) of 15% is evaluating four capital projects. The internal rates of return (IRR) are as follows:

Project	IRR
1	16%
2	13%
3	17%
4	14%

The firm should:

A. Accept project 4, 1, and 3, and reject 2
B. Accept project 4, 1, and 3, and reject 2
C. Accept project 3, and reject 1, 2, and 3
D. Accept project 3, and 1, and reject 2 and 4

Answer: D

Solution:
If IRR > COC → accept
If IRR < COC → reject

10. A firm is evaluating three independent capital projects. The net present values (NPV) for the projects are as follows:

Project	NPV
1	\$100
2	\$0
3	–\$100

The firm should:

A. Accept Projects 1 and 2 and reject Project 3.
B. Accept Projects 1 and 3 and reject Project 2.
C. Accept Project 1 and reject Projects 2 and 3.
D. Reject all projects.

Answer: A
Accept if NPV ≥ 0

11. A Canadian oil company is considering whether or not to develop a site it has been exploring for the past six months. One of the arguments for developing the site is that considerable time and money have already been expended. This cost should not be included in the capital budgeting decision because it is:

A. An opportunity cost.
B. A sunk cost
C. An operating cost
D. A financing cost

Answer: B

12. Media Giants is looking at an opportunity of setting up a new production facility, which requires the purchase of a new printing press that costs $2 million. The costs to install the machine are $60,000. In addition, the company will need additional inventory of $40,000 for the project use. What is the initial cash outflow associated with the investment opportunity?

A. $1,980,000
B. $2,060,000
C. $2,100,000
D. $2,150,000

Answer: C

CF_0 = $2,000,000 + $60,000 + $40,000= $2,100,000

13. Superior Transportation Inc. is considering a six-year project that requires $800,000 for the purchase of a capital asset with a CCA rate of 30 percent. The project is expected to generate sales revenue of $500,000 per year. The project's variable and fixed costs are estimated at $140,000 and $60,000 per year, respectively. The firm's marginal tax rate is 35 percent and cost of capital is 12 percent. What is the present value of the after-tax operating cash flows?

A. $801,724
B. $962,069
C. $1,274,536
D. $1,480,107

Answer: A,
PV(CFAT) = $(500,000 – 140,000 – 60,000)*(1 – 35%)*PVAF(12%,6) = $801,724.43

14. Company “XYZ” has a bond with 7 percent coupon rate and pays interest semi-annually. The face value is $1000 and the current market price is $970. The bond matures in 10 years. What is the yield to maturity (as a quoted rate compounded semi-annually)?

A. 5.88 %
B. 6.25%
C. 7.25%
D. 7.44%

Answer: D (YTM (calculator) = 3.72% * 2 = 7.44%)

15. How much would you pay for a share of stock today if you expect it will pay a dividend of $2.50 each year and will sell for $73 two years from now? Assume your required rate of return on this stock is 13 percent.

A. $60.50
B. $55.50
C. $53.54
D. $61.34

Answer: D,
P_0 = 2.5/(1+13%)+[(2.5+73)/(1+13%)^2]=61.34

16. Which of the following statements is most **CORRECT** for a project with conventional cash flows (i.e., one initial cash outflow and a series of cash inflows thereafter)?

A. The Profitability index will be greater than 1, whenever the NPV is negative.
B. Payback period will be greater than the lifetime of the project, whenever the NPV is negative.
C. IRR will be more than the required rate of return, whenever the NPV is positive.
D. Statements B and C are correct.

Solution: C

17. Diversification works because:

I. unsystematic risk exists
II. forming portfolios of stocks reduces the standard deviation of returns for each stock
III. firm-specific risk can be dramatically reduced

A. I only

B. III only
C. I and II only
D. I and III only

Solution: D

18. The ABC company has a beta of 0.8 and an expected return of 9%. The market risk premium is 7% and the risk-free rate is 2 percent. Which of the following statements is correct?

A. This asset is correctly priced according to the CAPM because its return lies on the security market line.
B. This asset is overpriced according to the CAPM because its return lies above the security market line.
C. This asset is underpriced according to the CAPM because its return lies above the security market line.
D. This asset is overpriced according to the CAPM because its return lies below the security market line.

Solution is C: k= 7.6% < 9%

19. A bond has a yield to maturity of 4% and a current yield of 6%. Which of the following statements is true?

A. The coupon rate must be 6%.
B. The bond is trading at a discount from face value.
C. The coupon rate must be less than the yield to maturity.
D. The bond is trading at a premium over face value.

Solution is D

20. The bonds of Micromachines have an 8% annual coupon, face value of $1000 and mature in four years. Bonds of equivalent risk yield 12%. The company is having cash flow problems and has asked its bondholders to accept the following deal: The firm would like to make the next 2 coupon payments at half the scheduled amount, and make up for this by adding $80 to the final coupon payment. If the company goes ahead with this plan what will be the new price of the bond? Choose the answer that is closest to correct.

A. $686
B. $878
C. $858
D. $861

Answer: D

21. A firm's WACC is estimated to be 8.61%. Its cost of equity is 11.4% and it is subject to a 36% income tax rate. The firm's debt-to-equity ratio is 0.25. What is the firm's after-tax cost of debt?

A. 11.68%
B. 12.24%
C. 19.45%
D. 12.45%

Solution: D

$X_E = 4/5 = 0.8$ and $X_D = 1/5 = 0.2$ $D/E = 0.2/0.8 = 0.25$

$11.61 = .8(11.4) +.2K_D(1-T)$ so $K_D(1-T) = 12.45$

22. A firm currently has a debt-equity ratio of 0.4. The after-tax cost of debt is 3% and the cost of equity is 12%. If the firm changes its debt-equity ratio to 0.6, all else constant, this change will :

A. cause the NPV of projects under consideration to increase.
B. cause the NPV of projects under consideration to decrease.
C. increase the firm's WACC.
D. decrease the cost of equity financing.

Solution: A

23. Ronnco bonds are currently selling for $917.12. These bonds mature in 12 years, pay semi-annual interest and have a yield to maturity of 6.4%. What is the coupon rate?

A. 5.4%
B. 2.7%
C. 2.4%
D. 5.7%

Solution: A

PV=-917.12 FV=1000 N=24 I/Y=3.2 so PMT=27 semi annual

Coupon rate is annual coupon divided by face value.

24. Technical analysis, which is defined as the analysis of historical trends of prices, is an important field in finance. Which form of market efficiency is this field based on?

A. Weak form efficiency

B. Semi-strong form efficiency
C. Strong form efficiency
D. None of the above

Solution: D

25. The Andrews Sisters Music Corp has just released its financial statements showing an unexpectedly high earnings number. Your friend believes that the new information will be useful and he is trying to do his best in analyzing the financial statement of company, to earn profit from price changes caused by this new release. This view is a **violation** of:

A. weak form market efficiency.
B. semi-strong form market efficiency.
C. strong form market efficiency.
D. Both B & C

Solution: D

26. Which bond would most likely possess the highest degree of interest rate risk?

A. 5% coupon rate, 10 years to maturity
B. 4% coupon rate, 20 years to maturity
C. 6% coupon rate, 10 years to maturity
D. 5% coupon rate, 20 years to maturity

Solution: B

27. Consider an investment with an initial cost of $20,000 and is expected to last for 5 years. The expected cash flow in years 1 and 2 are $5000, in years 3 and 4 are $5,500 and in year 5 is $1,000. The total cash inflow is expected to be $22,000 or an average of $4,400 per year. Compute the payback period in years.

A. 3.18
B. 3.82
C. 4.55
D. 4.00

Solution: B

28. An equipment is purchased at $100,000 and has a useful life of 3 years. The equipment will be worthless by the end of the three years. In each of these years, the before-tax cash flow is $40,000. If the tax rate is 35%, depreciation rate is 30 percent and the required rate of return is 18%, what is the present value of the CCA tax shields for this asset?

A. $ 20,206
B. $ 22,514
C. $ 22,814
D. $ 23,527

Solution: A

29. Eight percent compounded semi-annually is equivalent to what percentage compounded monthly?

A. 7.87%
B. 8.00%
C. 8.30%
D. 8.57%

Answer: A

30. An alternative to a cash dividend payment by the firm from its earnings to the shareholders, achieved by the firm buying some of its outstanding stock on the open market, is a:

A. Merger
B. Share Repurchase
C. Reverse Stock Split
D. Stock split

Answer: B

31. Two projects being considered by a firm are mutually exclusive and have the following projected cash flows:

Year	Project A Cash Flow	Project B Cash Flow
0	($100,000)	($100,000)
1	39,500	0
2	39,500	0
3	39,500	133,000

Based only on the information given, which of the two projects would be preferred, and why?

A. Project A, because it has a lower IRR.
B. Project B, because it has a higher IRR.
C. Indifferent, because the projects have equal IRRs.
D. Include both in the capital budget, since the sum of the cash inflows exceeds the initial investment in both cases.

Answer: B
Solution: IRR (project A) = 8.992%
IRR (project B) =9.972%

32. You are considering two stocks: "A" and "B". Based on your analysis, you believe that stock "A" will earn a return of 10% and stock "B" will earn a return of 8% next year. The beta of stock A is 1.2, while the beta of B is 0.8. The risk-free rate is 2 percent and the market risk premium is equal to 7 percent. Assuming that both stocks have been priced using CAPM, Which of the following choices is correct?

A. Stock A is undervalued, while stock B is overvalued.
B. Stock A is overvalued, while stock B is undervalued.
C. Both stocks are undervalued.
D. Both stocks are overvalued.

Solution: B

33. What is the present value of an investment that pays $150 every two years indefinitely, if the first payment starts two years from now? The effective monthly rate is 1 percent.

A. $556.17
B. $1182.96
C. $1573.96
D. $1675.14

Solution: A

34. Your company is planning to borrow $1,000,000 on a 10 year, 8 percent (EAR), annual payment, fully amortized loan. What fraction of the payment made at the end of the fourth year, will represent <u>repayment of interest</u>?

A. 62%
B. 58%
C. 42%
D. 38%

Solution: C

35. Jimmy sold (wrote) five TWX call option contracts with a strike price of $42 when the option was quoted at $3.20. The option expires today when the value of TWX stock is $38.15. Ignoring trading costs and taxes, what is the total profit or loss on his investment? The size of each contract is 100 stocks.

A. $1600, profit
B. $1600, loss
C. $385, profit
D. $385, loss

Solution: A
Profit= -max(S-K, 0)+C= (-max(38.15-42),0)+3.2)*5*100=1600

<u>Part II: Problems (30 Points Total)</u>

- ***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 grade.*

<u>Q1:</u> (7 points) Give the details of your calculations.

Consider the following two mutually exclusive projects:

Year	Cash Flow (A)	Cash Flow (B)
0	-$300,000	-$40,000
1	30,000	19,000
2	50,000	12,000
3	50,000	18,000
4	390,000	15,500

Whichever project you choose, if any, you require a 15% return on your investment.

a. If you apply the payback period criterion, which investment will you choose? Why? **(1.5 points)**

b. If you apply the discounted payback period criterion, which investment will you choose? Why? **(2 points)**

c. If you apply the NPV criterion, which investment will you choose? Why? **(2 points)**

d. If you apply the profitability index criterion, which investment will you choose? Why? **(1.5 points)**

Solution:
If you apply the payback criterion, which investment will you choose? Why?
(1.5 points)
The payback period for each project is:
A: 3 + ($170,000/$390,000) = 3.43589 years
B: 2 + ($9,000/$18,000) = 2.5 years
The payback criterion implies accepting project B, because it pays back sooner than project A.

If you apply the discounted payback criterion, which investment will you choose? Why? **(2 points)**
The discounted payback for each project is:
A: $\$30{,}000/1.15 + \$50{,}000/1.15^2 + \$50{,}000/1.15^3 = \$96{,}769.95$
$\$390{,}000/1.15^4 = \$222{,}983.77$
Discounted payback = 3 + ($300,000 – 96,769.95)/$222,983.77 = 3.9114 years
B: $\$19{,}000/1.15 + \$12{,}000/1.15^2 + \$18{,}000/1.15^3 = \$37{,}430.76$
$\$15{,}500/1.15^4 = \$8{,}862.17$

Discounted payback = 3 + ($40,000 – 37,430.76)/$8,862.17 = 3.2899 years
The discounted payback criterion implies accepting project B because it pays back sooner than A

If you apply the NPV criterion, which investment will you choose? Why? (**2 points**)
The NPV for each project is:
A: NPV = –$300,000 + $30,000/1.15 + $50,000/$1.15^2$ + $50,000/$1.15^3$ + $390,000/$1.15^4$
NPV_A= $19,753.72
B: NPV = –$40,000 + $19,000/1.15 + $12,000/1.152 + $18,000/1.153 + $15,500/1.154
NPV_B= $6,292.93
NPV criterion implies we accept project A because project A has a higher NPV than project B.

If you apply the profitability index criterion, which investment will you choose? Why? (**1.5 points**)
The profitability index for each project is:
A: PI = ($30,000/1.15 + $50,000/$1.15^2$ + $50,000/$1.15^3$ + $390,000/$1.15^4$) / $300,000 = 1.0658
B: PI = ($19,000/1.15 + $12,000/$1.15^2$ + $18,000/$1.15^3$ + $15,500/$1.15^4$) / $40,000 = 1.1573
Profitability index criterion implies accept project B because its PI is greater than project A's.

Based on your answers in a.-d., which project will you finally choose? **(1 point)**
The final decision should be based on the NPV since it does not have the ranking problem associated with the other capital budgeting techniques. Therefore, you should accept project A.

Q2: (8 points) Give the details of your calculations.

Trans Canada Pipelines has 1.5 million 4% preferred shares outstanding with a face value of $100. The preferred shares are trading at 105% of par value. The firm also has 8 million shares of common stock with a book value of $18 per share. The company just paid an annual dividend of $2 per share and shareholders expect it to grow by 0.8% per year forever. The current beta of the common stock is 0.9. There is also $140 million face value of outstanding debt with a coupon rate of 6% and an annualized yield to maturity of 4.6%. The bonds have semi-annual coupons and have 10 years left to maturity. The Treasury bill rate is 1.8% and the return on the market is 8%. The corporate tax rate is 35%. Calculate Trans Canada Pipelines' weighted average cost of capital.

Solution:

Preferred shares:
$\mathbf{k_P}$ = 4/105 = 0.0381 or **3.81%** **(1 point)**

Market value = \$105 x 1.5 million = **\$157.5 million** **(1 point)**

Common shares:
k_C = 0.018 + 0.9(.08 - .018) = **7.38%** **(1 point)**
PV of equity: [\$2(1.008) / (.0738 - .008) = \$30.6383 **(1 point)**
\$30.6383 x 8 million = **\$245,106, 383**. (0.5 points)

Debt:
For k_D : yield is 4.6% annualized = APR so 2.3% every 6 months. So $(1.023)^2 - 1 = .04653$ **(1 point)**
k_D after tax = .04653 (1-.35) = **3.0244%** **(0.5 points)**

Market value of debt:
.03 x \$140 million = \$4.2 million in coupon interest every 6 months for 20 time periods. (1 point)

$$\frac{4.2 \text{ Mill}}{..023}\left[1 - 1/(1.023)^{20}\right] + \frac{140 \text{ Mill}}{1.023^{20}} = 66{,}728{,}686.96 + \$88{,}841{,}394 = \mathbf{\$155{,}570{,}081}$$

Market value of firm: \$558,176,464
Weights: Preferred: 0.28 Common: 0.44 Debt: 0.28
WACC = 0.28(3.81) + 0.44(7.38) + 0.28(3.0244) = **5.16%** (1 point)

<u>Q3:</u> (8 points)

Husky Energy Inc. is considering a new 8 year project. The project requires the purchase of new equipment costing \$500,000 which can be salvaged for \$120,000 at the end of project, and has a depreciation rate of 20 percent. Revenue is expected to be \$100,000 in year 1 and will grow at 6% per year. The operating costs (not including the depreciation) are 30 percent of revenues. The firm needs to invest \$50,000 in net working capital immediately which is going to be recovered at the end of the project. The cost of capital is 10 percent and tax rate is 35 percent. Assume all the cash flows occur at the end of each year. Calculate the NPV of the project. Based on your calculations, should Husky Energy Inc. undertake the project?

Solution:
CF0 = -500,000 – 50,000 = -550,000 (1 point)
PV (OCFs) = $\frac{(100{,}000 - 30{,}000)(1-\mathrm{Tr})}{k-g}\left(1-\left(\frac{1+g}{1+k}\right)^8\right) = 291{,}721.1$ (2 points)
PV (salvage) = $\frac{120{,}000}{1.1\text{^}8} = 55{,}980.8$ (1 point)

PV(NWC recovery) = 23,325.3 (1 point)

PVCCATS = formula = 98,301.3 (1 point)

NPV = -80,671 (1 point)

Don't undertake the project (1 point)

<u>Question 4:</u> (7 points)

A share of XYZ corp. is currently trading at $30. Suppose you buy an XYZ call option with an exercise price of $35, and also buy an XYZ put option, with exercise price of $25. Both options have the same maturity date.

a. Draw a payoff-price diagram for the purchase of the XYZ $35 call. **(1.5 points)**
b. Draw a payoff-price diagram for the purchase of the XYZ $25 put. **(1.5 points)**
c. Draw a payoff-price diagram for the portfolio. **(2 points)**
d. If on maturity date, the value of XYZ stock is $37, what is your total profit/loss from holding this portfolio? Assume that the call option is quoted at $2.5 and the put option is quoted at $2. **(2 points)**

(For parts a, b, and c, clearly label both axes and all important points on the diagrams (points of intersections, points where graph changes direction etc.)

Solution: A, B, C should be clearly drawn. (Detailed diagrams will be sent out shortly)

D:
Any correct logic (based on diagrams or equations) is acceptable for getting the answer.
Answer = 2 – 2.5 – 2 = -2.5