

identification number. Students who fail to meet this regulation will receive a 15% penalty on their OVERALL EXAMINATION GRADE. This is a serious examination offence and must be taken seriously. Smoking is prohibited in the examination room.

Good luck on this section of your examination. We wish you well.

QUESTION 1 (2 Points)

On January 1, 2013 the ABC Company issued a bond with a PAR value of 1000 00\$. The bond has a coupon rate of 5%, paid once per year. The XYZ Corporation issued a bond with a face value of 985 00\$ and a 10% coupon rate. Suppose the yield curve for the XYZ firm is upward sloping. Similarly, the BNH Company issued a bond with a 4% coupon trading at par. The XYZ Company pays its coupons on a quarterly basis and, as a result, uses an Effective Quarterly Rate (EQR) to value its bond. Given that all firms in this scenario have the same risk characteristics, their bonds will have the same respective yield. Accordingly, estimate the price at which the ABC Company's bond is trading.

- a) 1000 00\$
- b) 985 00\$
- c) 1105 00\$
- d) 962 00\$
- e) There is insufficient information to value ABC's bond

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QUESTION 2 (2 Points)

An increase in the money supply, which caused the supply of money to shift rightwards, was recently engineered by the Central Bank. Because an increase in the money supply is an expansionary influence, it should raise national wealth. This will raise money demand and increase interest rates. The initial effect of this scenario is characterized by a decline in bond prices because

- a) Interest rates and bond prices are positively related.
- b) Interest rates and bond prices are inversely related.
- c) Interest rates and bond prices are not always related, but in this case are inversely related.
- d) Both A) and C) are true
- e) None of the above are true

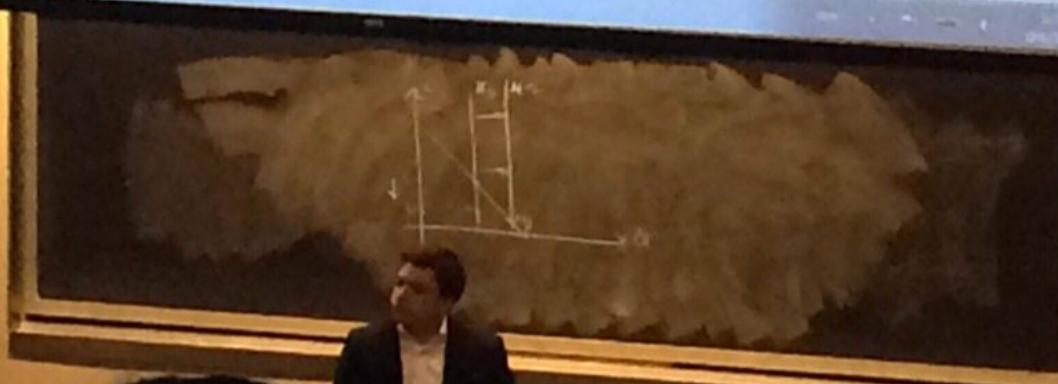
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- c) Interest rates and bond prices are not always related, but in this case are inversely related.
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QUESTION 3 (2 Points)

Consider the concept of isoquants. If labour and capital are perfect complements, this implies which of the following?

- a) The shape of the isoquant will be a straight downward-sloping line.
- b) Capital and labour cannot be perfect complements in an economy.
- c) The shape of the isoquant will be a flat horizontal line.
- d) The shape of the isoquant will be in the form of an L.
- e) None of the above.



QUESTION 4 (2 Points)

The following table gives you the current and expected future one-year interest rates as well as the rates for multi-year bonds. Calculate the liquidity premium required by an investor who is contemplating holding a three-year bond.

Year	1 Year Bond Rate	Multi Year Bond Rate
1	3.00%	3.00%
2	3.00%	3.50%
3	4.00%	4.50%
4	4.50%	5.50%

- a) 0.1667%
- b) 1.1667%
- c) 1.5000%
- d) 1.0000%
- e) No risk premium exists yet because the investor is contemplating and has not physically entered the financial market.

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QUESTION 5 (2 Points)

Which of the following statements is false?

- D) An optimal capital-labour ratio of $6L = K$ signifies that six labourers are required for every unit increase of capital.
- II) The concept of "Bubbles" deals with declines in prices based not on supply and demand fundamentals, but on an irrational belief that prices will continue to rise over time.
- III) Earnings are a component of total compensation but total compensation is not a component of earnings.
- IV) A Cartesian plane with multiple isoquants is known as an isoquant map.
- V) Expected inflation is a determinant of bond demand.
- VI) Individuals are prone to work more hours when their wage increases.

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- VII) A lower marginal utility of income (MIU) is associated with higher levels of income. A lower marginal utility of leisure (MUL) is associated with higher levels of leisure.

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- VII) A lower marginal utility of income (MUY) is associated with higher levels of income. A lower marginal utility of leisure (MUL) is associated with higher levels of leisure.
- a) II, V), VI) and VII).
 - b) I, II), VI) and VII).
 - c) D, V), VI), and VII).
 - d) I, II), VI) and VII).
 - e) I, II), and VI).

QUESTION 6 (2 Points)

The population of Canada is approximately 37 million. Suppose that 5 million individuals are not part of the labour force. Suppose 10% of the total population is aged between 0 and 7 years old. There are 22.5 million individuals who are employed. The unemployment rate is given as 0.1. Given 8.92% of the total population is aged between 7 and 15 years of age, calculate the labour force participation rate.

- a) 0.110
- b) 0.833
- c) 0.675
- d) 0.598
- e) 0.902

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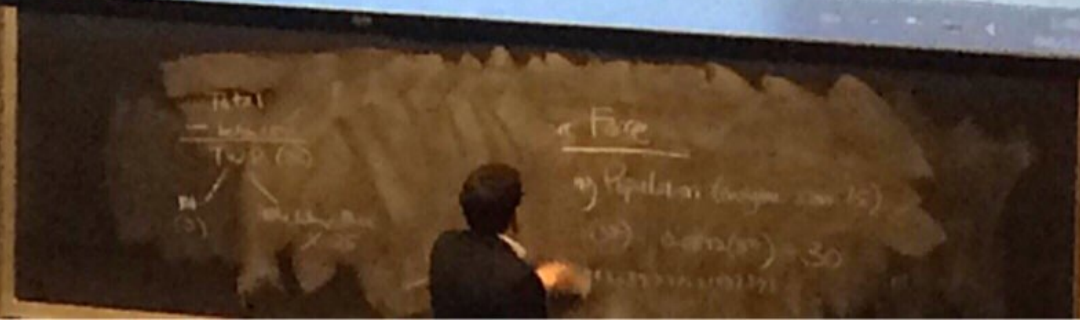
QUESTION 7 (2 Points)

An investor is compiling a portfolio of the following stocks. The expected return and weights of each stock are given below. Calculate the expected return of this investor's portfolio.

- STOCK A: -25% return, weighted at 5% of the portfolio.
- STOCK B: +5% return, weighted at 6% of the portfolio.
- STOCK C: +35% return, weighted at 47% of the portfolio.
- STOCK D: -2% return, weighted at 31% of the portfolio.
- STOCK E: +11% return, weighted at 10% of the portfolio.

- a) The expected return is approximately 15.98%.
- b) The expected return is approximately 15.89%.
- c) The expected return is approximately 18.95%.
- d) The expected return is approximately 19.58%.
- e) None of the above are true.

QUESTION 8 (2 Points)



The following table gives you the current and expected future one-year interest rates as well as the rates for multi-year bonds. Calculate the return required on a bond of three years to maturity to induce investors.

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Year	1 Year Bond Rate	Liquidity Premiums
1	3.00%	1.000%
2	3.00%	2.510%
3	4.00%	2.167%
4	4.50%	4.850%

- a) 8.125%
- b) 5.500%
- c) 4.510%
- d) 2.167%
- e) 4.500%

QUESTION 9 (2 Points)

Consider the following statements. Choose all that are true.

- I) One way to solve the principal-agent issue is to rid the principal. If one of the parties does not exist, the conflict cannot exist.
 - II) A valid positive statement is a result of a valid normative statement.
 - III) A valid normative statement is a result of a valid positive statement.
 - IV) A comparative advantage leads to a competitive advantage when the price of inputs and outputs are accurate.
 - V) A competitive advantage leads to a comparative advantage when the price of inputs and outputs are accurate.
- a) II), IV) and V) only
 - b) III), IV) and V) only
 - c) I), II), and V) only
 - d) I), III) and IV) only
 - e) III) and IV) only



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- b) I), IV) and V) only.
- c) I), II), and V) only.
- d) I), III) and IV) only.
- e) III) and IV) only.

QUESTION 10 (2 Points)

Choose the most appropriate statement among the following:

- a) The lemons problem is most closely associated with the moral hazard problem.
- b) A rise in the expected return relative to other investments will cause the demand for bonds to shift left. Similarly, a rise in the expected return of a bond over time will also cause the demand for that bond to shift left.
- c) Short-term securities, on average, are offered at lower prices because they entail much less interest risk than do long-term securities.
- d) If a German firm issues a bond in the Chinese financial market denominated in Canadian currency, then this is known as a foreign bond.
- e) Financial intermediaries will always achieve both economies of scale and economies of scope in providing financial services to their customers.

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QUESTION 11 (2 Points)

An economy is composed of two goods, Good A and Good B. The income elasticity of demand for Good A is 1.2 while the price elasticity of demand for good B is -1.2. The income elasticity for Good B is -0.3. The cross price elasticity of demand between these two products is 1.5. Further, suppose Good A's real price is \$1.80 and Good B's real price is \$1.49. Given that Good A's price elasticity of demand is perfectly elastic, which of the following is true?

- a) Good A and Good B are substitutes and Good B is an inferior good.
- b) Good A and Good B are neither inelastic.
- c) Good A must be that of a perfectly competitive market.
- d) Both A) and C) are true.
- e) Answers A), B) and C) are true.

QUESTION 12 (2 Points)

The demand for labour in the labour market typically exhibits a downward sloping curve. The most logical explanation for this includes:

- a) The scale effect only.
- b) The substitution effect only.
- c) Both the scale and substitution effect.
- d) The income effect only.
- e) Both the income and substitution effect.
- f) None of the above.

QUESTION 1 (12 Points)

The following question contains three sub questions. Answer each independently from one another.

PART A (6 Points)

The Twinkie Company is interested in knowing how many units of labour (L) it should employ to maximize profits. The Company provides you with the following information. As a consultant, advise them on how many units of labour they should employ. If you deem this questions to be unsolvable, state the information that would be necessary to determine the answer and justify the importance of such parameters.

Quantity Function	$2L^2$
Revenue Generated for Each Unit Produced	\$5.98
Cost of Each Unit Produced	\$4.07
Slope of the Isoexpenditure Line Quantity in Units	3.6584
Cost of Each Additional Unit of Capital	\$8.90

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PART B (5 Points)

You decide to invest in the production of Molecular Model Kits, typically used by Science students. Suppose one kit is valued at a CERTAIN value of 200\$. You estimate that there is a 60% chance that this kit will become valuable. If so, the value of the model kit will rise to 400\$. Otherwise, the kit will be worth only 100\$. Further, suppose your utility function is $U = I^{1/2}$. Comment on your level of risk aversion and, if appropriate, calculate and draw the resulting risk premium. RECALL THAT PREMIUMS ARE CALCULATED BY SUBTRACTING THE CERTAIN VALUE FROM THE EXPECTED VALUE.

PART A (5 Points)

The table below provides the dollar value labour productivity of two countries per two hours. Answer the corresponding questions given the unit prices of both tomatoes and potatoes are 10\$ each.

	Canada	United States of America
Tomatoes	600\$	400\$
Potatoes	300\$	300\$

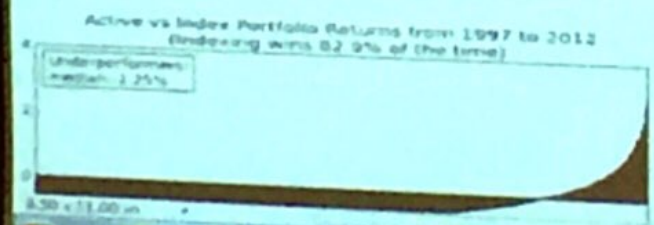
- Which country has the absolute advantage in producing potatoes?
- Which country has the comparative advantage in producing potatoes?
- What are the upper and lower level bounds for the trade price of potatoes?
- What are the gains from trade from a 500 unit specialization in potatoes if the relative price traded at is 1.5 tomatoes for 1 potato?

PART B (5 Points)

A recent article in The Economist, discussing the profitability and viability of active management, claimed the following:

"Index funds clearly have won the hearts and minds of many investors. So are there any reasons to even consider actively managed investments these days? The naysayers' argument in recent years has been a powerful one. The odds are against active managers beating the market. But many advisers still believe that active management is superior to those of passive investments. That is particularly true, they say, if the active portfolio has a good long-term track record and charges lower management fees than most of its peers."

Based on the above statement, give your case for or against active management. Reference any figure where you see fit. Your essay analysis cannot exceed 500 words.



What percentage of the top 25% of the equity mutual funds in 1997 belonged to the top quartile in the subsequent year?

(5) Talk

CA	USA
1000T	750T
(750T)	(66T)
55T	50T
	2T

1000T - 750T = 250T

250T - 66T = 184T

184T - 50T = 134T

134T - 2T = 132T



PART C (4 Points)

A basket of goods in the domestic country costs 100 00\$ of the local Canadian currency. The same basket costs \$77 1935 in the foreign American currency. Suppose, further, that the interest rate for year in the domestic market is 3% while the foreign interest rate at the same time period is 5%.

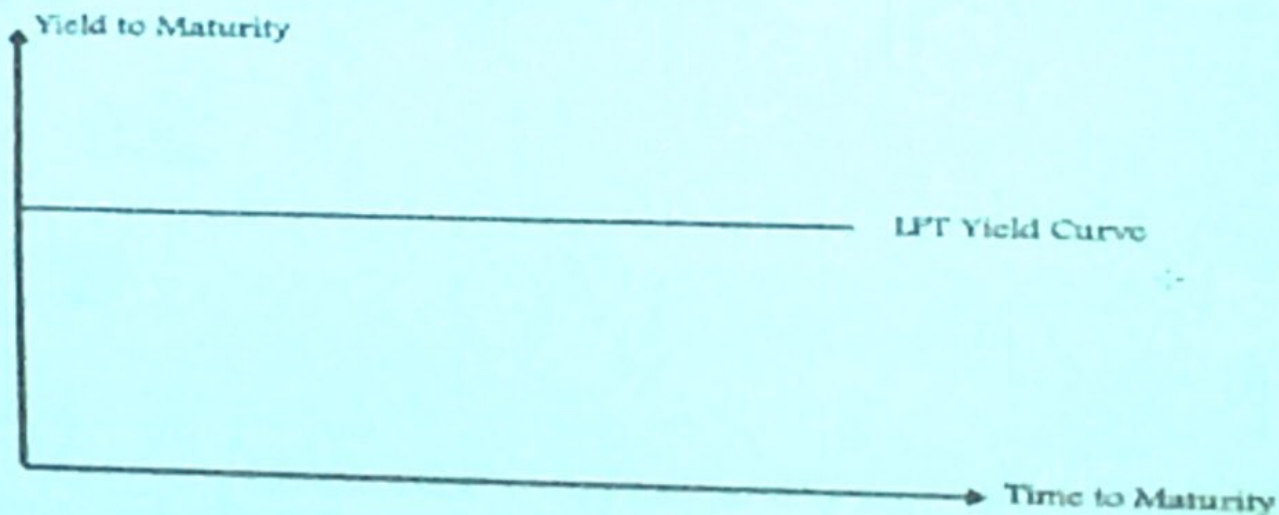
- Considering purchasing power parity holds, calculate the forward exchange rate assuming that the current exchange rate of 1.14 corresponds to information given in the above analysis.
- Suppose that the one-year forward rate was briefly out of equilibrium and stood at 1.2934. Would an investor be encouraged to invest domestically or abroad? Support your answer with calculations.

QUESTION 3 (14 Points)

The following question contains four sub questions. Answer each independently from one another.

PART A (1 Point)

Interpret the following yield curve using the liquidity premium theory. Explain your response.



PART B (5 Points)

Mr. S is a prospective investor. He is pondering an investment in two assets: Stock A and Stock B, which, together, would make up Portfolio P. As his investment advisor, you are required to determine the standard deviation of the portfolio investment for Mr. S. To facilitate you in doing so, you have been provided the following pertinent pieces of information:

- (1) Data values have been obtained for both expansionary and recessionary conditions.
- (2) The probability of a boom expansion is 35%. The probability of a recession is 65%.
- (3) The variance on a similar portfolio, but not identical to that of Portfolio P, is 0.0958.
- (4) The rate offered on government treasury bills is 1.84%.
- (5) During an expansion, Stock A will offer 20% return while Stock B will offer 25% return.
- (6) During a recession, Stock A will offer 10% return and Stock B will offer 4% return.
- (7) Stock A has similar, but not identical, risk characteristics to Stock D which offers 35% return during expansions/booms.
- (8) As per Mr. S' request, Stock A will be worth 62% of the Portfolio P.

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PART C (5 Points)

In the September 13, 2013 *Weekly Market Update* published by Goldman Sachs & Co., the following ten-year information spread was reported in various exhibits for Treasury securities. All yields are shown on a bond-equivalent basis.

Period	Yield to Maturity	Spot Rate	Period	Yield to Maturity	Spot Rate
1	5.25%	5.25%	11	7.75%	?
2	5.50%	5.50%	12	8.00%	8.27%
3	5.75%	5.76%	13	8.25%	8.59%
4	6.00%	6.02%	14	8.50%	9.92%
5	6.25%	?	15	8.75%	9.25%
6	6.50%	?	16	9.00%	?
7	?	?	17	9.25%	?
8	?	?	18	9.50%	10.36%
9	?	?	19	?	10.77%
10	7.50%	?	20	?	11.20%

Calculate the six-month forward rate starting in the sixth year. What is the credit risk associated with this treasury security?

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PART D (1 Point)

Michael, an employee of the Government of Quebec, earns 250\$ per day. His total discretionary time per day is 16 hours. If Michael were to work for the totality of his discretionary time, he could make X \$. However, he decides to consume six hours of leisure per day. Suppose that Michael was hurt and required a serious operation to restore his lifestyle. In recovering from the operation, he is taking time off from work. Michael is on unemployment insurance. Find the value of X .

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TDT: 16hr
Daily Earn: 250\$

QUESTION 13 (2 Points)
Choose the answer which is correct.

- a) The Trade-to-GDP ratio is typically useful in explaining why a particular economy imports and exports.
- b) The Trade-to-GDP ratio, on average, is higher for larger countries.
- c) One of the major benefits of international economic integration is that capital flows make financial crises harder to spread because such capital flows are more effective and efficient.
- d) On average, deep economic integration follows shallow economic integration.
- e) A), B) and D) only.

QUESTION 14 (2 Points)
Which of the following is not true concerning the imposition of a price floor?

- a) An example of a price floor is a minimum wage and so to be binding it must be set above equilibrium in order to reduce the price for consumers.
- b) Consumers will always lose under this policy, without exception.
- c) Producers can either gain or lose under this policy.
- d) This policy will result in a deadweight loss, otherwise known as a negative change in economic welfare.

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- e) If supply is very inelastic and demand is very elastic, then producers would experience a net loss without exception.

QUESTION 15 (2 Points)

Which of the following is most appropriate?

- a) Government TREASURY bonds, stocks, mortgages, mortgage-backed securities, corporate bonds, and government agency securities are all capital market instruments.
- b) Commercial papers and repurchase agreements are typically part of the money market while overnight funds are considered to be a money market and capital market instrument depending on their maturity length.
- c) Chartered banks, trusts, loan companies, credit unions and caisses populaires are always considered to be depository institutions.
- d) Both A) and B) are true.
- e) Both A) and C) are true.
- f) None of the above are true.

QUESTION 16 (2 Points)

You are considering an investment in risky and risk-free assets. The reason you want to diversify is because you have heard it can reduce your risk exposure. Suppose the

- d) 0.145
- e) There is insufficient information to answer this question

QUESTION 17 (2 Points)

Choose the most appropriate statement.

- a) Direct finance is more efficient, and thus better, than indirect finance
- b) Bonds with a coupon rate below the current yield (CY) must be offered at a premium to attract investors
- c) Risk loving investors experience a curve convex to the origin because they require less return as risk increases, hence the term risk loving.
- d) Financial intermediaries help diversify all the risk of an investment, thereby reducing risk exposure to their investors
- e) Given two investments with the same expected return but different standard deviations, a risk neutral investor possibly does not choose the one with the lower risk.

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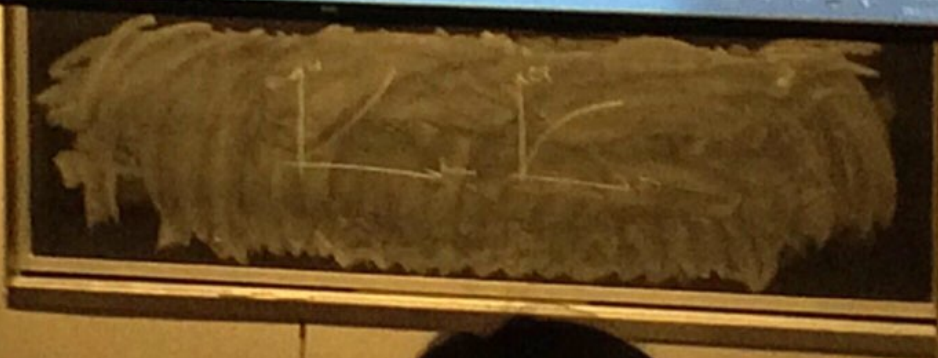
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QUESTION 18 (2 Points)

Franzy works at Starbucks. Though she was happy with her job, she has broken her foot and is unable to tend to the work. Before the incident, she was earning 120\$ per day and consuming 8 hours of leisure. If Franzy's total discretionary time was twenty hours, calculate the slope of her budget line.

- a) The resulting slope is 6.
- b) The resulting slope is 15.
- c) The resulting slope is 11.
- d) The resulting slope is 5.
- e) None of the above is true.

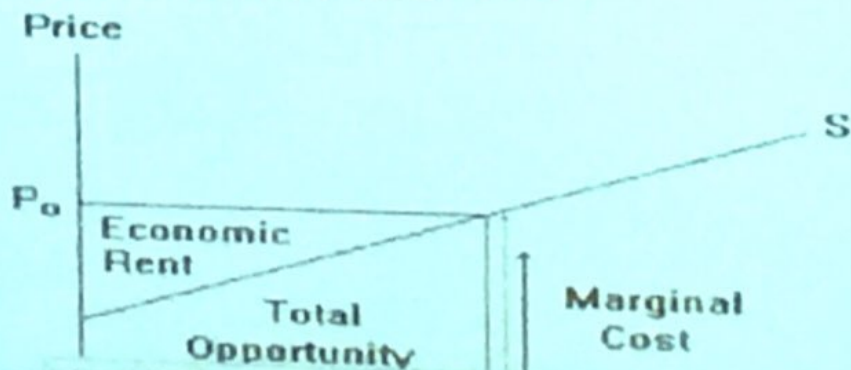
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QUESTION 20 (2 Points)

Maria is an employee of Chummy Chun Corp. In 2015, Chummy Chun Corp set Maria's hourly wage to be \$9.75. As a result of a union protest, this company-wide wage increased by \$2.50. When she began her employment at the company (X years ago), her wage was \$8.50, indexed for inflation. The inflation in the United States is comparable, but not identical, to that of the Canadian markets, indexed at approximately 2% per year. Maria is a permanent Canadian resident and will be taxed on her worldwide income for the entire taxation year. The following graph provides you with information concerning Maria's employment in 2015. Certain coordinates are listed below:

- (1) $Q_0 = 10$ hours of work, and
- (2) $P_0 = \$14.00$ per hour wage
- (3) Economic Rent Area Value = 4.75



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- b) The resulting slope is 15
- c) The resulting slope is 11
- d) The resulting slope is 5
- e) None of the above is true

QUESTION 19 (2 Points)

An effective quarterly rate with semi-annual compounding implies which of the following.

- a) Interest is paid twice per year
- b) Interest is paid monthly
- c) Interest is paid every three months
- d) Interest is paid every four months.
- e) Interest is only paid once per year at the Statement of Financial Position date.



- b) III, IV) and V) only
- c) I, II, and V) only
- d) I, III) and IV) only
- e) III) and IV) only

QUESTION 10 (2 Points)

Choose the most appropriate statement among the following:

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- b) A rise in the expected return relative to other investments will cause the demand for bonds to shift left. Similarly, a rise in the expected return of a bond over time will also cause the demand for that bond to shift left.
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- f) None of the above are true.

QUESTION 16 (2 Points)

You are considering an investment in risky and risk-free assets. The reason you want to diversify is because you have heard it can reduce your risk exposure. Suppose the combination of such investments yields expected return and risk of 14.9% and 19% respectively. Suppose further that the standard deviation of risky assets is 26% with an expected value of 17%. The rate of return on the S&P 500 benchmark is 5%. CALCULATE the standard deviation of the complete portfolio.

- a) 0.126
- b) 0.154
- c) 0.190
- d) 0.145
- e) There is insufficient information to answer this question.