FINA 210 INTRODUCTION TO REAL ESTATE FALL 2017 SECTION AA

MIDTERM 2
OCTOBER 25, 2017
CHAPTER 5, 7, 9, 10

SECTION A SELECT THE CORRECT ANSWER, 10 QUESTIONS, EACH QUESTION IS WORTH ½ GRADE. THE MAXIMUM POSSIBLE GRADE IS 5/5,

SECTION B SOLVE, SHOW YOUR CALCULATIONS, 5 QUESTIONS, UNDERLINE YOUR ANSWER. THE MAXIMUM POSSIBLE GRADE IS 5/5,

SECTION C READ THE TEXT, ANSWER THE QUESTIONS. 5 QUESTIONS. THE MAXIMUM POSSIBLE GRADE IS 10/10.

THE TOTAL MAXIMUM POSSIBLE GRADE FOR THIS MIDTERM IS 20/20.
THE WEIGHT OF THIS MIDTERM IS 15% OF YOUR TOTAL COURSE GRADE. GOODLUCK!

NAME: _____ STUDENT ID: _____

Section A (10 QUESTIONS)

1) Must all properties in a comparable property valuation have the same cap rate?
   a) Yes
   ✓ b) No

2) The cost approach to valuation is based on:
   a) Historical cost less depreciation.
   b) Historical cost.
   ✓ c) Replacement cost.
   d) Replacement cost less depreciation.

3) A mortgage constant equals:
   a) The credit spread on a floating rate mortgage
   b) The fixed interest rate on a commercial mortgage
   c) The sum of annual principal payments over initial principal amount
   ✓ d) The sum of annual debt service payments over initial principal amount

4) In determining the amount of a loan a lender considers:
   a) The value of the property against the loan amount
   b) The property cash flow against the required debt service
   c) The historic performance and future prospects for the property
   ✓ d) All of the above

5) The responsibility for the management of a real estate partnership rests with the:
   a) limited partner
   ✓ b) general partner
   c) syndication
   d) property manager

6) Which is not true about equity?
   ✓ a) Has a set maturity date
   b) Absorbs economic risk
   c) Gives holder a say in major decisions
   d) Has no set cash flow

7) In which type of property sale clause does the partner that initiates a sale give the other partner(s) the opportunity to acquire the property at the best price received in the marketplace?
   a) Right of first offer
   ✓ b) Right of first refusal
   c) Sale by appraisal
   d) All of the above

8) This type of fee is calculated as a percentage of property revenue:
   ✓ a) Property Management
   b) Acquisition
   c) Development Fee
   d) Construction Management Fee

9) Increasing the amount of leverage applied has what impact on the risk associated with a property investment?

   a) decreases
   b) remains the same
   ✓ c) increases
   d) no impact

10) Which of the following statements about amortization is true?

   a) Loan term > amortization period
   b) A shorter amortization period improves DSCR
   ✓ c) Over time amortization improves LTV
   d) Amortization increases the Interest Coverage Ratio

Section B (5 QUESTIONS)

1) Using the Cost Replacement Approach, calculate the value of a small mall. The 9,500 sq. ft. mall is on a 20,000 sq. ft. land. Land cost is $25/sq. ft. and construction costs $85/sq. ft. (1/2 Marks)

Value = Land Cost + Construction Cost
Value = $25/sqft x 20,000sqft + $85/sqft x 9,500sqft
Value = $500,000 + $807,500
Value = $1,307,500

2) Property in Toronto has significantly appreciated. Condominiums are selling at $1000/sq. ft. An executive still owes the bank $1,500,000 but feels that she has built up significant equity in her 2,700 sq. ft. Penthouse. How much equity is in her Penthouse? (1/2 Mark)

Value = $1000/sqft x 2,700sqft
Value = $2,700,000
Loan = $1,500,000

Equity = Value - Loan
Equity = $2,700,000 - $1,500,000
Equity = $1,200,000

3) I have $70,000 and I want to invest in real estate. I am interested in buying a studio and expect to pay $350,000 for it. I will finance the balance of the purchase through a loan.

   a. What will my LTV be? (1/2 Mark)

Loan = Value - Equity
Loan = $350,000 - $70,000
Loan = $280,000

LTV = Loan/Value
LTV = $280,000/$350,000
LTV = 0.8
LTV = 80%

   b. After purchasing my property, I received a property assessment that valued my property at $375,000. What is the equity in my property based on the assessment? (1/2 Mark)

Value = $375,000
Loan = $280,000

Equity = Value - Loan
Equity = $375,000 - $280,000
Equity = $95,000

4) I want to buy a 15-story property in downtown that has a floor plate of 19,000 sq.ft. and building is built with no setbacks. The building occupies the full piece of land. It is brand new.

   a. What is the valuation of the property using the Cost Approach. Land in downtown is valued at $350/sq.ft. and construction costs for apartment buildings are $300/sq.ft. (1/2 Mark)

Value = Land Cost + Construction Cost
Value = $350/sqft x 19,000sqft + $300/sqft x 19,00sqft x 15 floors
Value = $6,650,000 + $85,500,000
Value = $92,150,000

b. What is the value of the property using the Sales Comparison Approach. Two comparable properties just sold for $45,500,000 and $46,000,000 respectively. Assume that properties older than ten years are priced at a discount of15% and property that are less than ten years old are priced at a premium of 5%. Brand New Building enjoy a 10% premium. (1/2 Marks)

Property A: $45,500,000
Floor Plate 18,000 sq.ft.
Floors 18
Built in 2005

Property B: $46,000,000
Floor plate 18,000 sq.ft.
Floors 22
Built in 2003.

Step 1: Common Denominator: Price/Sq. Ft.
Step 2: Property A = $45.5M/(18 Floors x 18,000sq.ft.) = $140.43/sq.ft.
Property B = $46M/(22 Floors x 18,000sq.ft.) = $116.16/sq.ft.
Step 3: Both Properties are older than ten years.
Their price was reduced by 15% so the price per square foot must be inflated:
A - 15%A = $140.43/sq.ft.
A = ($140.43/sq.ft.)/0.85 = $165.21/sq.ft.
B - 15%B = $116.16/sq.ft.
B = ($116.16/sq.ft.)/0.85 = $136.66/sq.ft.
Step 4: Average Price per Square Foot = ($165.21/sq.ft. + $136.66/sq.ft.)/2 = $150.93/sq.ft.
Step 5 Value of Subject Property = Average Price per Square Foot x Area x Adjustment
Area = 15 Floors x 19000 sq. ft. = 285,000 sq.ft.
Adjustment: Brand New, 10% Premium
Value of Subject Property = ($150.93/sq.ft. x 285,000 sq.ft.) x 1.1 = $47,316,555

5) Debt Service = $48,000/year
Loan = $800,000
Equity = $800,000
NOI = $480,000

Calculate the ROI, ROE, Mortgage Constant, and DSCR (1 Marks)

Asset Value = Equity + Loan = $800,000 + $800,000

ROI = Unlevered Cashflow/Asset Value
ROI = $480,000/$1,600,000
ROI = 30%

ROE = Levered Cashflow/Equity
ROE = NOI - Debt Sevice/Equity
ROE = ($480,000-($48,000))/$800,000
ROE = 54%

Mortgage Constant = Annual Debt Service/ Loan Amount
Mortgage Constant = $48,000/$800,000
Mortgage Constant = 6%

DSCR = Unlevered CashflowAnnual Debt Service
DSCR = $480,000/$48,000
DSCR = 10

6) An investor is willing to provide you with equity to start your company in real estate investments. You located a property that is selling at $2,000,000. His hurdle rate is 8% and the bank is willing to lend you at 4%. If his investment in your company is going to be $500,000, what minimum return should this property offer you? (1 Marks)

Equity = $500,000
Value = $2,000,000

Loan = Value - Equity
Loan = $2,000,000 - $500,000
Loan = $1,500,000

WACC = 0.08 x $500,000/$2,000,000 + 0.04 x $1,500,000/$2,000,000
WACC = 0.02 + 0.03
WACC = 0.05

This property should generate a minimum return of 5%.

Section C (5 QUESTIONS)

One of your colleagues in class identified a potential investment opportunity for her course project. It is a retail space in a highly desirable location. At the time of analysis, the unit was vacant. It is now occupied by a long-term tenant that has signed a 10-year lease. She is now hesitant and debating whether this will be a good investment. Let's give her some direction on whether she should proceed or not. She feels that she may now be stuck with a 10-year lease that will not generate the return she was anticipating.

Purchase Price: $1,250,000 Area: 1,713 square feet

Location: Excellent

Expenses:	Insurance Expense	$550/year
	Energy Costs	$4,850/year
	Fees	$6,600/year
	Municipal Taxes	$27,247/year
	School Taxes	$1,343/year

1) Assume the new tenant is paying $221/square foot in rent. What are her annual Revenues? What are her Annual Expenses? What is her NOI? (1½ Marks)

Revenues = $221/sqft x 1,713 sqft
Revenues = $378,573

Expenses = $550 + $4850 + $6600 + $27,247 + $1,343
Expenses = $40,590

NOI = Revenues - Expenses
NOI = $378,573 - $40,590
NOI = $337,983

2) If she purchases the property at full price, what is her Cap Rate? (1/2 Mark)

Cap Rate = NOI/Value
Cap Rate = $337,983/$1,250,000
Cap Rate = 27.03%

3) She has secured two equity partners and a loan from the bank. One equity partner is willing to invest $250,000 and expects a return of 5%, her second equity partner is willing to invest $100,000 and expects a return of 10%. The bank will fund the remainder of her loan at 2% What is her WACC? (2 Marks)

Equity = $250,000 + $100,000
Equity = $350,000
Value = $1,250,000

Loan = Value - Equity
Loan = $1,250,000 - $350,000
Loan = $900,000

WACC = 0.05 x $250,000/$1,250,000 + 0.1 x $100,000/$1,250,000 + 0.02 x $900,000/$1,250,000
WACC = 0.01+0.0144+0.08
WACC = 0.0324 = 3.24%

4) Her Annual Debt Service is $39,919
   a) What is the investment's ROI, ROE, LTV and Mortgage Constant? (2 Marks)

ROI = Unlevered Cashflow/Asset Value
ROI = $337,983/$1,250,000
ROI = 27%

ROE = Levered Cashflow/Equity
ROE = NOI - Debt Sevice/Equity
ROE = ($337,983-($39,919))/$350,000
ROE = 85%

LTV = Loan/Value
LTV = $900,000/$1,250,000
LTV = 72%

Mortgage Constant = Annual Debt Service/ Loan Amount
Mortgage Constant = $39,919/$900,000
Mortgage Constant = 4.4%

   b) Will she meet the hurdle rates expected from her equity investors, explain? (1 Mark)

Yes, ROE > WACC.

5) The bank requires a minimum DSCR 10.
   a) Does she qualify to secure a loan, calculate her DSCR? (1 Mark)

DSCR = Unlevered CashflowAnnual Debt Service
DSCR = $337,983/$39,919
DSCR = 8.5

No, DSCR <10. She will not qualify to secure a loan.

   b) If she does not qualify, how can she convince her bank to improve her DSCR? (1 Mark)

She can convince her bank to improve her DSCR by asking them to reduce her debt service through either:
a) Lowering the interest rate on the loan; or
b) Increasing amortization period of the loan.

   c) If she cannot convince her bank to improve her DSCR, how can her equity investors help her improve her DSCR? (1 Mark)

Her equity investors can provide her with higher equity, thereby reducing the loan amount required to close the deal and in effect, reduce her debt service. Reducing her debt service will increase her Debt Service Coverage Ratio.