Midterm FINA 450/1 Section AA ~ SUMMER 2011 *Professor J. Mannadiar*
June 2nd, 2011 ~ 11:45am – 1:45pm ~ MBS2.210
Read and follow instructions to avoid penalty (VA)

YOU are concerned over a real estate transaction that you are currently undertaking. The details are as follow: ~

PROPERTY	BOIS FRANC	KIRKLAND
Asking Price	$550,000	$660,000
Offer (ACCEPTED)	At 8% premium	At 5% discount

627000

$594000

Financing Plan (FP)	FPA	FPB
Loan-to-Value Ratio	75%	80%
1st Mortgage	65% of Loan @ 4.75%	85% of Loan @ 5.15%
2nd Mortgage	Balance @ 5.05%	Balance @ 5.65%
Compounded	Semi-annually	Semi- annually
Payments payable	Annually	Annually
Processing fees	0.75% of Loan	1.05% of Loan
Cancel. penalty *	1.20% of M. Balance 14yrs	1.45% of M. Balance → 10yrs
Term (years)	25	30

* cancellation fees applicable if cancelled before 12 years

The property has 26,000 square feet of space for rent and the going rate is $3.20 per square foot for the first 14,000 square feet and at 15% discount per square foot for the remaining area. It is estimated to have a 12% vacancy and credit losses and the operating expenses (excluding depreciation) is approximately 36% of effective gross income.

The property consists of building which represent 70% of value and the balance represent land. The building belongs to Class 3 with a CCA rate of 4%, declining balance method, half year rule applies.

You plan to keep the property for 14 years with Financing Plan A (FPA); and for 10 years with Financing Plan B (FPB). The tax rate is 40% and 50% of the capital gains is taxed. Inflation is 2.55% per annum.

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Question #1. *see page 2 for details*

Assume No cash on hand (No COH); you stay for the entire term and you want Financing Plan A (FPA).
What is the Effective Cost of Borrowing (ECB) for KIRKLAND?. ➔ *Answer* 4.989414%.

Show work below and use back of PREVIOUS page if you need more space

SP = 627000

loan = $\frac{470250}{1 - .751} = 473804$

307 973

EAR = 4.806406

165 831

EAR = 5.113756

PMT? M#1

FV = 0 I/Y = 4.806406

PV = 307 973 n = 25

CPT → PMT = 21 429

M#2

FV = 0 I/Y = 5.113756

PV = 165 831

n = 25

CPT → PMT = 11901

ECB? PMT = (33330) n = 25

FV = 0

PV = 470280 CPT → ECB = 4.989414%

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Question #2. *see page 2 for details*

Assume Cash on Hand (COH), you sold the property as planned under Financing Plan B (FPB).
What is the ECB for Property BOIS FRANC?.

➔ *Answer:* S.5418571.

Show work below and use back of PREVIOUS page if you need more space)

SP = 594000

loan = 475200

Pf = 4990

EAR = 5.216306

403 920

71 280

EAR = 5.729806

M#1
PV = 403920
n = 30
I/Y = 5.216306
FV = 0
CPT → PMT = 26 927

M#2
PV = 71280
I/Y = 5.729806
FV = 0
n = 30
CPT → PMT = 5030

M#1 $M_{Bal_{20}}$
n = 30 − 10 = 20
PMT = (26 927)
FV = 0
I/Y = 5.216306
CPT → PV = 329 500

M#2 n = 20 PMT = (5030)
FV = 0 I/Y = 5.729806
CPT → PV = 58 981

FV = 329 500 + 58 981 + 633 penalty
FV = 394 114

ECB?
n = 10
FV = (394 114)
PMT = (31952)
PV = 475 200 − 4990 = 470 210

CPT → ECB = 5.5418571.

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Question #3 *see page 2 for details*

Assume No COH, use Financing Plan A (FPA) and you sold the property as planned. What is the weighted average cost of capital (WACC) of Property BOIS FRANC?.

Note: Cost of debt (rd) = ECB; and the opportunity costs of your down payment equals ECB + plus 6.25% risk premium?

➔ *Answer* 5.064499%

Show work below and use back of PREVIOUS page if you need more space)

SP = 594 000

$\text{loan} = \frac{445\,500}{1 - 0.75} = 448\,866$

EAR = 4.806406
291 763

157 103
EAR = 5.113756

M#1 FV = 0 n = 25
I/Y = 4.806406
PV = 291 763
CPT → PMT = 20 301

M#2 FV = 0 n = 25
I/Y = 5.113756
PV = 157 103
CPT → PMT = 11 274

$MBal_{11}$

M#1
n = 11 FV = 0
PMT = (20 301) I/Y = 4.806406
CPT → PV = 170 356

M#2
n = 11 FV = 0
PMT = (11 274) I/Y = 5.1137
CPT → PV = 93 090

ECB?
FV = 170 356 + 93 090 + penalty N/A
= (263 446)

PV = 445 500
n = 14
PMT = (31 575)
CPT → ECB = 5.002856%

WACC = rd(1-t)(LVR) + re(H
= (5.002856)(.6)(.75) + (5.002856+62
(.25
= 5.064499%.

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Question #4 *see page 2 for details*

What is the Gross Income Multiplier (GIM), Net Operating Income Multiplier (NIM) and Overall Capitalization Rate (OCR)?.

Complete the table below for the buyer and seller

	Investor KIRKLAND	Seller BOIS FRANC
GIM	9.20X	8.07X
NIM	14.38X	12.61X
OCR	6.96%	7.93%

Show work below and use back of PREVIOUS page if you need more space

(14K)(3.20) + (12K)(3.20)(.85)

PGI 77 440
− VCL 9 293
EGI 68 147
− OE 24 533
NOI 43 614

$GIM = \frac{627000}{68147} = 9.20X$ $GIM = \frac{AP}{EGI} = \frac{550000}{68147} = 8.0$

$NIM = \frac{627000}{43614} = 14.38X$ $NIM = \frac{AP}{NOI} = \frac{550000}{43614} = 12.6$

$OCR = 6.96\%$ $OCR = \frac{1}{NIM} = 7.93\%$

Based on your expectations on GIM, NIM and OCR given, was this transaction a Favorable ($) or Unfavorable ($) for the *BUYER* of the BOIS FRANC property.

Complete the following table:

Buyer's Expected	Favorable $	Unfavorable $
GIM = 8.50 times		14 751
NIM = 13.75 times	5693	
OCR = 7.30%	3452	

Show work below and use back of PREVIOUS page if you need more space

GIM = 8.50

$8.50 = \frac{V}{68147}$

V = 579 250 VS. 594000

NIM = 13.75

$13.75 = \frac{V}{43614}$

V = 599693 VS. 594000

OCR = 7.30%

$V = \frac{43614}{7.30\%} = 597452$ VS. 594000

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Question #5 *see page 2 for details*

What is the Cash Flows After Taxes (CFAT) for Year 1 and Year 2?. Assume COH and Financing Plan B (FPB) for property KIRKLAND.

NOI Yr. 2 = 43614 (1.0255) = 44 726

Identify ANSWER below

Use this table if you find it useful

		Year 1	Year 2
NOI		43 614	44 726
Depreciation	–	8778	17 205
EBIT		34.836	27521
Interest	–	26 551	26172
EBT		8285	1 349
Taxes	–	3314	540
EAT		4971	809
CCA	+	8778	17205
Principle	–	7181	7560
CFAT ➔Answer		$6 568	$10484

Show work below and use back of PREVIOUS page if you need more space)

Bld → 627 000 (.70) = 438 900

Yr.	BUCC	CCA	EUCC
1	438900	8778	430122
2	430122	17205	412917

EAR = 5.21630

426 360

loan = 501 600

175 240

EAR = 5.72980

M#1

Yr.	PMT	Int.	Principle	L. Bal
0	—	—	—	426 360
1	28423	22240	6183	420177
2	28423	21918	6505	413672

M#2

Yr	PMT	Int	Principle	L. Bal
0	—	—	—	75 240
1	5309	4.311	998	74242
2	5309	4254	1055	73187

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Question #6.

Raphael purchased a property for $700,000 and RBC financed it under the following terms: *Assume No Cash on Hand.* There is 1.30% processing fees based on loan amount; and 1.20% cancellation penalty based on outstanding mortgage balance, if mortgage is cancelled before 8 years into term.

- Down payment 35 percent loan 65% → $\frac{455\,000}{1-1.30\%} = 460993$
- Term 15 years $\times 12 = 180$
- Payment mode MONTHLY
- Interest Rate 5.70% per annum, compounded semi-annually

How much do you owe the bank after 120 payments?

➔ *Answer* $198248

Show work below and use back of PREVIOUS page if you need more space

$I/Y = \left(1 + \frac{5.70\%}{2}\right)^{(2/12)} = 0.469456$

198291

$n = 180 \quad FV = 0$

$PV = 460\,993 \quad CPT \rightarrow PMT = 3799$

$n = 180 - 120 = 60 \quad PMT = (3799)$

$I/Y = 0.469456$

$FV = 0$

$PV = 198\,248$

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Question #7

You have been given the assignment to appraise a property. This property has 55,000 square feet (s.f.) of usable space on 88,000 square feet of land. Analysis of construction costs indicate a per square-foot cost of $12.80 for the first 25,000 square feet of space; $16.80 per square foot for the next 23,000 square feet, and $20.25 per square foot for the balance. The property is seventy-two years old with an estimated economic life of one hundred and twenty years. Changing neighborhood (location depreciation) characteristics have had a negative influence on the property of approximately 18% of building (construction) costs. An examination of similar lots indicate a land value of $19 per square foot. 72/120

What is the estimated market value of this property based on the Cost Approach? ➔**Answer:** $1858593

Show work below and use back of PREVIOUS page if you need more space

Value of Bld (as if new) (25K)(12.80)+(23K)(16.80)+(7K)(20.25)	848 150
less : Depn	
(72/120)(848150)	(508 890)
(18%)(848150)	(152 667)
Book Value	186 593
Add: Value of land (as if vacant)	1 672 000
(19)(88000)	
Mkt Value →	$ 1 858 593

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Question #8

A property has 15,000 square feet of rentable space at $22 per square foot. You expect a vacancy and credit loss of 12% and operating expense (without CCA) is 38% of effective gross income. LVR = 70%, and down payment is $240,000. Financing is at 5.95% per annum compounded semi-annually, payable annually. The processing fees is 0.85% of loan and the term is 25 years. The opportunity costs of equity is 4.15% above the effective cost of borrowing (ECB) the mortgage loan. Tax rate is 40%. You have NO Cash on Hand. *What is the value of this property based on the Net Income Approach?* ➔**Answer:** $ 2441 768

Show work below and use back of previous page if you need more space

PGI (15K)(22) = 330 000
− VCL (39 600)
EGI 290 400
− OE (110 352)
NOI 180 048

$NIA = \frac{NOI}{WACBT}$

$= \frac{180\,048}{7.373672\%}$

$= 2,441,768$

$V = \frac{240K}{.30} = 800K$ $loan = \frac{560\,000}{1-.85} = 564\,801$

PMT? PV = 564 801 FV = 0
n = 25 I/Y = 6.038506
CPT → PMT = 44 344

ECB? PV = 560 000 FV = 0
n = 25 PMT = (44 344)

CPT → ECB = 6.128672

$WACC_{BT} = rd(LVR) + re(1-LVR)$
$= (6.128672)(.70) + (6.128672+4.15)(.30)$
$= 7.373672\%$

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Question #9

You obtained a mortgage 7 years ago for $780,000 at 6.45% per annum compounded semi-annually, processing fees was 1.25% of loan, amortized over 20 years. Mortgage rates has dropped so that a 13-year loan can be obtained at 5.90% per annum, compounded semi-annually. Cancellation penalty is 0.85% of mortgage outstanding balance. There is a 1.75% processing fees on the new loan. If you plan to switch, what is the ECB of the new loan? Assume you have NO cash on hand.

➔***Answer:*** 6.437016%

Show work below and use back of previous page if you need more space

Old loan

PV = 780000
FV = 0
n = 20
I/Y = 6.554006%
CPT → PMT = 71094

MBal 13

FV = 0 PMT = (71094)
n = 13
I/Y = 6.554006%
CPT → PV = 609 495

= 609 495 + penalty 5181
= 614 676

614 676 / (1 − 1.75%) = 625 624

New loan

PMT? PV = 625 624
I/Y = 5.987025%
n = 13
FV = 0
CPT → PMT = 70 617

ECB? PMT = (70 617)
PV = 609 495
n = 13
FV = 0
CPT → ECB = 6.437016%

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Question #10

On June 2nd, 2011 a potential buyer offered you $720,000 for your property and you have the following information to evaluate the offer.

- Housing prices increasing at 3.35% per annum
- $155 per square foot
- $43,000 per year reduction for age
- Two-car garage valued at $88,000 compared to $35,000 for a one-car garage
- Corner property warrants a 18 percent premium
- Swimming pool worth approximately $45,000 considered a *good* selling point in your neighborhood

	Your Property	*The Comparable*
Selling Price	**?**	***$750,000***
Sold (when)	**Now**	***December 2nd, 2010***
Location	**corner**	***middle***
Size (square feet)	**10,200**	***11,500***
Age (years)	**8**	***14***
Garage	**two-car**	***one-car***
Swimming pool	**No**	***Yes***
Financing	**Conventional**	***Conventional***

Should you accept this offer? ***Circle*** ➔ ***YES*** ***or*** ***NO***

What is the value of your home?. ➔Answer: $962,063

Show work below and use back of PREVIOUS page , if you need more space

SP 750 000
Inflation (6/12)(3.35%)(750K) 12 563
location (18%)(750K) 135 000
size (1300)(155) (201 500)
age (6)(43K) 258 000
garage 53 000
pool (45 000)
962 063

end

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YOU are concerned over a real estate transaction that you are currently undertaking. The details are as follow: ~

PROPERTY	BOIS FRANC	KIRKLAND
Asking Price	$550,000	$660,000
Offer (ACCEPTED)	At 8% premium	At 5% discount
Financing Plan (FP)	FPA	FPB
Loan-to-Value Ratio	75%	80%
1st Mortgage	65% of Loan @ 4.75%	85% of Loan @ 5.15%
2nd Mortgage	Balance @ 5.05%	Balance @ 5.65%
Compounded	Semi-annually	Semi- annually
Payments payable	Annually	Annually
Processing fees	0.75% of Loan	1.05% of Loan
Cancel. penalty *	1.20% of M. Balance	1.45% of M. Balance
Term (years)	25	30

* cancellation fees applicable if cancelled before 12 years

The property has 26,000 square feet of space for rent and the going rate is $3.20 per square foot for the first 14,000 square feet and at 15% discount per square foot for the remaining area. It is estimated to have a 12% vacancy and credit losses and the operating expenses (excluding depreciation) is approximately 36% of effective gross income.

The property consists of building which represent 70% of value and the balance represent land. The building belongs to Class 3 with a CCA rate of 4%, declining balance method, half year rule applies.

You plan to keep the property for 14 years with Financing Plan A (FPA); and for 10 years with Financing Plan B (FPB). The tax rate is 40% and 50% of the capital gains is taxed. Inflation is 2.55% per annum.

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Question #1. *see page 2 for details*

Assume No cash on hand (No COH); you stay for the entire term and you want Financing Plan A (FPA).
What is the Effective Cost of Borrowing (ECB) for KIRKLAND?. ➔*Answer* 4.989414 %

Show work below and use back of PREVIOUS page if you need more space

SP → 627000

loan → $0.75 \times 627000 = \frac{470250}{1-0.0075} = 473,804$

M#1 → $0.65 \times 473,804 = 307,973$

M#2 → $0.35 \times 473,804 = 165,831$

M#1) PV = 307973
N = 25
FV = 0
I\Y = 4.806406%
Pmt = ? ⇒ $21,429

M#2) PV = 165831
N = 25
FV = 0
I\Y = 5.113756%
Pmt = ? ⇒ $11,901

3) PV = 470250
FV = 0
N = 25
Pmt = (33,330) → 21,429 + 11,901
I\Y = ECB ? ⇒ 4.989414 %

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Question #2. *see page 2 for details*

Assume Cash on Hand (COH), you sold the property as planned under Financing Plan B (FPB). 10 yrs
What is the ECB for Property BOIS FRANC?.

➔ *Answer:* 5.541857 %

Show work below and use back of PREVIOUS page if you need more space)

SP → 594,000
loan → 0.8 × 594,000 = 475,200

M#1 → 0.85 × 475200 = 403920
M#2 → 0.15 × 475200 = 71280

1) PV = 403920
N = 30
I\Y = 5.216306 %
FV = 0
Pmt = ? ⇒ 26,927

2) PV = 71280
N = 30
I\Y = 5.729806 %
FV = 0
Pmt = ? ⇒ 5,030

PV = ? ⇒ 329,500
N = 20
I\Y = 5.216306 %
FV = 0
Pmt = (26927)

PV = ? ⇒ 58981
N = 20
I\Y = 5.729806 %
FV = 0
Pmt = (5,030)

FV → 329500 + 58981 + cancel. fee (5633)
→ 394,114

* cancel fee
1.45 % × 388481

FV = −394114
PV = 475200 − fees = 470210
N = 10
I\Y = ? ⇒ 5.541857 %
Pmt = (31,957) → 5030 + 26927

* P fees ⇒
1.05 % × 475200
= 4990

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Question #3 *see page 2 for details*

Assume No COH, use Financing Plan A (FPA) and you sold the property as planned. What is the weighted average cost of capital (WACC) of Property BOIS FRANC?. 14 yrs

Note: Cost of debt (rd) = ECB; and the opportunity costs of your down payment equals ECB + plus 6.25% risk premium?

➔ *Answer* 5.064499 %

Show work below and use back of PREVIOUS page if you need more space)

SP → 594000

$0.75 \times 594\,000 = \frac{445,500}{1 - 0.005} = 448,866$

M#1 → $0.65 \times 448\,866 = 291763$
M#2 → $0.35 \times 448\,866 = 157103$

1) PV = 291763
N = 25
I\Y = 4.806406 %
FV = 0
Pmt = ? ⇒ 20 301

2) PV = 157103
N = 25
I\Y = 5.113756 %
FV = 0
Pmt = ? ⇒ 11,274

PV = ? ⇒ 170356
N = 11
I\Y = 4.806406 %
FV = 0
Pmt = (20301)

PV = ? ⇒ 93090
N = 11
I\Y = 5.113756 %
FV = 0
Pmt = (11274)

FV → 170356 + 93090 = 263,446 * NO fees

FV = −263446
PV = 445500
N = 14
Pmt = (31575) → 11274 + 20301
I\Y = ECB? ⇒ 5.002856 % = rd
rel → 6.25% + 5.002856% = 11.252856 %
WACC = rd (1−t)(LVR) + rel(1−LVR)
= 5.002856 (1−0.4)(0.75) + 11.252856 % (0.25)
= 5.064499 %

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Question #4 *see page 2 for details*

What is the Gross Income Multiplier (GIM), Net Operating Income Multiplier (NIM) and Overall Capitalization Rate (OCR)?.

Complete the table below for the buyer and seller

sold in this case so $

	Investor KIRKLAND	Seller BOIS FRANC
GIM	9.2 X	8.07 X
NIM	14.38 X	12.61 X
OCR	6.96 %	7.93%

Show work below and use back of PREVIOUS page if you need more space

PGI
− VCL
EGI
− OE
NOI

(14000 × 3.20$) + (12000 × 2.72$) = 77440
12 %
(9293)
68147
36 %
(24533)
43614

Investor:
GIM = SP/EGI = 627000/68147 = 9.2 X
NIM = SP/NOI = 627000/43614 = 14.38
OCR = NOI/SP = 43614/627000 = 6.96 %

Seller
GIM = AP/EGI = 550000/68147 = 8.07 X
NIM = AP/NOI = 550000/43614 = 12.61 X
OCR = NOI/AP = 43614/550000 = 7.93 %

Based on your expectations on GIM, NIM and OCR given, was this transaction a Favorable ($) or Unfavorable ($) for the *BUYER* of the BOIS FRANC property. → $594000 buy

Complete the following table:

Buyer's Expected	Favorable $	Unfavorable $
GIM = 8.50 times		$14,750
NIM = 13.75 times	$ 5693	
OCR = 7.30%	$ 3,452	

Show work below and use back of PREVIOUS page if you need more space

GIM → 8.5x = X / 68147
= 579,250

NIM → 13.75x = X / 43614
= 599,693

OCR → 7.30 % = 43614 / X
X = 597,452

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Question #5 *see page 2 for details*

What is the Cash Flows After Taxes (CFAT) for Year 1 and Year 2?. Assume COH and Financing Plan B (FPB) for property KIRKLAND.

* calculated in previous question

Identify ANSWER below

Use this table if you find it useful

	Year 1	Year 2	
NOI	$43,614	$44,726	→ 43614 x 1.0255
Depreciation	(8778)	(17 205)	
EBIT	34 836	27521	
Interest 22240+4311	(26551)	(26172)	→ 21918+ 4254
EBT	8285	1,349	
Taxes 0,4	(3314)	(540)	
EAT	4971	809	
CCA	8778	17205	
Principle 6183+ 998	(7181)	(7560)	→ 6505+ 1055
CFAT ➔Answer	$6,568	$10,454	

Show work below and use back of PREVIOUS page if you need more space)

SP → 627 000
BL → 0.7 × 627000 = 438900

Yr	BUCC	CCA (4% HYR)	EUCC
1	438900	8778	430122
2	430122	17,205	412917

627 000 → x 0.8 = 501,600
loan

N=30 M#1 → 0.85 × 501600 = 426360
M#2 → 0.15 × 501600 = 75240

Pmt 1 ? ⇒ 28,423
Pmt 2 ? ⇒ 5,309

M#1 @ 5.216306 %.

Yr	Pmt	Int	Principle	Loan Bal 426360
1	28423	22,240	6183	420177
2	28423	21918	6505	413672

M#2 @ 5.729806 %.

Yr	Pmt	Int	Principle	Loan Bal 75240
1	5309	4311	998	74242
2	5309	4254	1655	73187

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Read and follow instructions to avoid penalty (VA)

Question #6.

Raphael purchased a property for $700,000 and RBC financed it under the following terms: *Assume No Cash on Hand.* There is 1.30% processing fees based on loan amount; and 1.20% cancellation penalty based on outstanding mortgage balance, if mortgage is cancelled before 8 years into term.

- Down payment 35 percent → 0.65 ⇒ loan ↳ $\frac{\$455,000}{1-0.013} = 460,993$
- Term 15 years
- Payment mode MONTHLY
- Interest Rate 5.70% per annum, compounded semi-annually ↳ EAR

How much do you owe the bank after 120 payments? 10 yrs

➔ *Answer* $198,271

Show work below and use back of PREVIOUS page if you need more space

@ 5.781225 %

Yr	Pmt	Int	Principle	Loan Bal
0				460993
1	46789	26651	20138	440855
2	46789	25,487	21 302	419 553
3	46789	24,255	22534	397019
4	46789	22,953	23,836	373183
5	46789	21,575	25,214	347969
6	46789	20,117	26,672	321,297
7	46789	18,575	28,214	293,083
8	46789	16,944	29,845	263,238
9	46789	15,218	31,571	231667
10	46789	13,393	33,396	$198,271

PV = 460993
N = 15 yrs
I/Y = 5.781225%
FV = 0
Pmt = 46,789

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Question #7

You have been given the assignment to appraise a property. This property has 55,000 square feet (s.f.) of usable space on 88,000 square feet of land. Analysis of construction costs indicate a per square-foot cost of $12.80 for the first 25,000 square feet of space; $16.80 per square foot for the next 23,000 square feet, and $20.25 per square foot for the balance. The property is seventy-two years old with an estimated economic life of one hundred and twenty years. Changing neighborhood (location depreciation) characteristics have had a negative influence on the property of approximately 18% of building (construction) costs. An examination of similar lots indicate a land value of $19 per square foot.

What is the estimated market value of this property based on the Cost Approach? ➔***Answer:*** $1,858,593

Show work below and use back of PREVIOUS page if you need more space

Value of BL (as if new) $848,150
− Depreciation
→ physical } 72/120 × 848150 (508890)
→ Functional } 18% × 848150 (152,667) (661557)
Book value (Net cost) 186593
Value of Land (as if vacant)
↳ 19$ × 88,000 1,672,000
$1,858,593

* 55000 → 25000 × 12.80$
23000 × $16.80
7000 × 20.25$

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Question #8

A property has 15,000 square feet of rentable space at $22 per square foot. You expect a vacancy and credit loss of 12% and operating expense (without CCA) is 38% of effective gross income. LVR = 70%, and down payment is $240,000. Financing is at 5.95% per annum compounded semi-annually, payable annually. The processing fees is 0.85% of loan and the term is 25 years. The opportunity costs of equity is 4.15% above the effective cost of borrowing (ECB) the mortgage loan. Tax rate is 40%. You have NO Cash on Hand. *What is the value of this property based on the Net Income Approach?* **➔Answer:** $2,441,768

EAR = 6.038506%

Show work below and use back of previous page if you need more space

PGI 15000 × $22 = 330000
− VCL 12% (39600)
EGI 290400
− OE 38% (110352)
NOI 180,098

→ NIA → NOI / WACC B4 tax

→ Loan → 0.7 × 240000 ⇒ $560000 / 1 − 0.0085 = 564,801
DP 0.3

PV = 564801
N = 25
I/Y = 6.038506%
FV = 0
Pmt = 44,344

PV = 560000
N = 25
FV = 0
Pmt = (44344)

I/Y → ECB?
⇒ 6.128672% = rd

rel ⇒ 4.15% + 6.128672% = 10.278672%.

$WACC_{B4tax}$ = 6.128672%(0.7) + 10.278672%(0.3)
= 7.373672%

NIA → $180,048 / 7.373672% = $2,441,768

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Question #9

You obtained a mortgage 7 years ago for $780,000 at 6.45% per annum compounded semi-annually, processing fees was 1.25% of loan, amortized over 20 years. Mortgage rates has dropped so that a 13-year loan can be obtained at 5.90% per annum, compounded semi-annually. Cancellation penalty is 0.85% of mortgage outstanding balance. There is a 1.75% processing fees on the new loan. If you plan to switch, what is the ECB of the new loan? Assume you have NO cash on hand.

→ EAR = 6.554006

→ EAR 5.98705

➔Answer: 6.4370160%

Show work below and use back of previous page if you need more space

1) PV = 780,000
N = 20
I/Y = 6.554006%
FV = 0
Pmt = ? 71094

N = 13
I/Y = 6.554006%
FV = 0
Pmt = (71094)
PV = ? $609,495

Balance you owe
↳ 609,495 + penalty* → 0.85% × 609495 = 5181
= 614676 / (1 − 0.0175) = 625,624
↑ new loan

2) PV = 625624
N = 13
I/Y = 5.98705%
FV = 0
Pmt = ? ⇒ 70617 ↗

New ECB? ⇒ 6.4370160%
FV = 0
PV = 609495
N = 13
Pmt = (70617)

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Question #10

On June 2nd, 2011 a potential buyer offered you $720,000 for your property and you have the following information to evaluate the offer.

- Housing prices increasing at 3.35% per annum
- $155 per square foot
- $43,000 per year reduction for age
- Two-car garage valued at $88,000 compared to $35,000 for a one-car garage
- Corner property warrants a 18 percent premium
- Swimming pool worth approximately $45,000 considered a *good* selling point in your neighborhood

	Your Property	*The Comparable*
Selling Price	**?**	***$750,000***
Sold (when)	**Now**	***December 2nd, 2010***
Location	**corner**	***middle***
Size (square feet)	**10,200**	***11,500***
Age (years)	**8**	***14***
Garage	**two-car**	***one-car***
Swimming pool	**No**	***Yes***
Financing	**Conventional**	***Conventional***

Should you accept this offer? Circle ➔ YES or NO

What is the value of your home?. ➔Answer: $962,063

Show work below and use back of PREVIOUS page , if you need more space

SP → $750,000

Adjustments

Inflation 6/12 x 3.35% x 750K → + 12,563
age 6 yrs x $43000 + 258,000
area(sf) 1300sf x 155$ − 201,500
location 18% x750K + 135,000
garage + 53,000
pool − 45,000

$962,063

end

12

⇒ DO not accept offer bcz $962,063 > $720,000