

**INVESTIT ACADEMY IN-HOUSE
COMMERCIAL REAL ESTATE EDUCATION

PARTICIPANT'S PACKAGE**

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WELCOME

Thanks for participating in the Investit Academy In-House commercial program.

Getting started in commercial real estate is a challenge as there is a **lot to learn**.

The in-house Investit Academy program introduces the fundamentals of real estate investment analysis and valuation and discusses the issues, complexities and dangers involved in listing and selling income properties fast tracking you to commercial success.

Learning Processes

It is well known that we all have different ways we like to learn.

Recognizing this and to make the Investit Academy commercial in-house sessions interesting and to enhance the learning process the sessions consists of:

- 1) Video segments covering specific commercial topics
- 2) Flash cards sets which is a great way to learn basic terms and formulas
- 3) Class exercises
- 4) Quiz. At the end of the third session there is a short quiz to test your understanding of the most common terms and formulas used in commercial real estate
- 5) 101 How to Analyze and Value Income Properties manual which is ideal for taking notes and for a later reviews

Calculator

You will need to bring a calculator. It can be any kind of calculator. It doesn't have to be a financial calculator.

Remember the formulas

There are a few really important financial measures such as the Cap Rate that you need to learn and can write down and apply without referring to your manual or notes. They are:

Gross Income Multipliers

Cap Rate

Calculation of the Net Operating Income

Return on Equity. Also called Cash on Cash Return and Equity Dividend Rate

Default Ratio or Break-even Point

Ratios used by lender to determine loan amounts.

 Loan to Value Ratio (LTV)

 Debt Service Coverage Ratio. Also called Debt Service Ratio
or Debt Coverage ratio

Operating Expenses Ratio

Skills and benefits obtained from the in-house sessions

1. How to analyze and restructure “Income & Expense Statements” so that they more realistically represent the financial performance of the property
2. How to use the various financial measures such as the Gross Income Multiplier, Cap Rate, etc., to value an income property and appreciate the limitations of these simplistic approaches
3. Identify investment risks
4. Understand how important it is for the buyer of income properties to obtain professional engineering, tax and legal advice

The knowledge and skills developed during the in-house sessions will improve your ability to value, list and sell income properties and put deals together. Fast tracking you to success in commercial real estate.

Real Estate Investment Analysis Formulas with sample calculations

INCOME & EXPENSE STATEMENT

Income

Potential Gross Income (PGI) \$ _____

Less: Vacancy and Bad Debt Allowance _____

Equals: Effective Gross Income (EGI) \$ _____

Operating Expenses

Exclude: Depreciation

Mortgage Payments

Non-Operating Expenses

Capital Expenditures \$ _____

Net Operating Income (NOI) _____

Less: Debt Service (P + I) _____

Cash Flow Before Tax (CFBT) _____

Less: Income Taxes _____

Equals Cash Flow After Tax (CFAT) \$ _____

FINANCIAL MEASURES

Used to determine the value of income properties

Potential Gross Income Multiplier (PGIM)

Also called Potential Gross Rent Multiplier (PGRM)

$$\begin{aligned} \text{PGIM} &= \frac{\text{Market Value}}{\text{Potential Gross Income}} \\ &= \frac{\text{MV}}{\text{PGI}} \end{aligned}$$

OR

$$\begin{aligned} \text{Market Value} &= \text{Potential Gross Income} \times \text{PGIM} \\ &= \text{PGI} \times \text{PGIM} \end{aligned}$$

Effective Gross Income Multiplier (EGIM)

Also called Effective Gross Rent Multiplier (EGRM)

$$\begin{aligned}\text{EGIM} &= \frac{\text{Market Value}}{\text{Effective Gross Income}} \\ &= \frac{\text{MV}}{\text{EGI}}\end{aligned}$$

OR

$$\begin{aligned}\text{Market Value} &= \text{Effective Gross Income} \times \text{EGIM} \\ &= \text{EGI} \times \text{EGIM}\end{aligned}$$

Net Income Multiplier (NIM)

$$\begin{aligned}\text{NIM} &= \frac{\text{Market Value}}{\text{Net Operating Income}} \\ &= \frac{\text{MV}}{\text{NOI}}\end{aligned}$$

OR

$$\begin{aligned}\text{Market Value} &= \text{Net Operating Income} \times \text{NIM} \\ &= \text{NOI} \times \text{NIM}\end{aligned}$$

Cap Rate**Capitalization Rate (Cap Rate)**

Also called Broker's Yield

$$\begin{aligned}\text{Cap Rate (\%)} &= \frac{\text{Net Operating Income} \times 100}{\text{Market Value}} \\ &= \frac{\text{NOI} \times 100}{\text{MV}}\end{aligned}$$

OR

$$\begin{aligned}\text{Market Value} &= \frac{\text{Operating Income} \times 100}{\text{Cap Rate (\%)}} \\ &= \frac{\text{NOI} \times 100}{\text{Cap Rate (\%)}}\end{aligned}$$

Return on Equity or Cash On Cash**Return on Equity (ROE)**

Also called:

Equity Dividend Rate (EDR) Term used by appraisers

Cash on Cash

$$\text{ROE (\%)} = \frac{(\text{Net Operating Income} - \text{Debt Service}) \times 100}{\text{Equity}}$$

$$= \frac{\text{Cash Flow Before Tax} \times 100}{\text{Equity}}$$

$$= \frac{(\text{NOI} - \text{DS}) \times 100}{(\text{MV} - \text{Mtge.})}$$

Equity = Market Value – Mortgage

Debt Service = Principal & Interest Payment

OR

$$\text{Market Value} = \frac{(\text{NOI} - \text{DS}) \times 100}{\text{ROE (\%)}} + \text{Mortgage}$$

Default Ratio or Break-even Point**Default Ratio (Break-even) (%)**

Using Potential Gross Income

$$= \frac{(\text{Operating Expenses} + \text{Debt Service}) \times 100}{\text{Potential Gross Income (PGI)}}$$

Using Effective Gross Income

$$= \frac{(\text{Operating Expenses} + \text{Debt Service}) \times 100}{\text{Effective Gross Income (EGI)}}$$

Operating Expense Ratio

$$= \frac{\text{Operating Expense} \times 100}{\text{Effective Gross Income}}$$

Used to check if the expenses are realistic

FINANCE MEASURES

Used by lenders to determine loan amounts for income properties.

Debt Service Ratio (DSR)

Also called Debt Coverage Ratio (DCR)

or Debt Service Coverage Ratio (DSCR)

Debt Service Ratio

$$\text{Debt Service Ratio (DSR)} = \frac{\text{Net Operating Income}}{\text{Debt Service}}$$

Debt Service = Principal & Interest Payments

Loan to Value Ratio

$$\text{Loan to Value Ratio \% (LTV)} = \frac{\text{Loan Amount} \times 100}{\text{Market Value}}$$

GENERAL FINANCING MEASURES

Rental Apartment Building Measures.

1. Price per Unit
2. Price per Sq. Foot (Using Suite Areas)
3. Rents per Sq. Foot per month
4. Operating Costs
 - a. Operating Costs per Unit per Year
 - b. Operating Cost per Sq. Foot per Year
5. Operating Expense Ratio (OER) = $\frac{\text{Operating Expense} \times 100}{\text{Effective Gross Income}}$

Used to check if the expenses are realistic

Commercial Real Estate. Sample Calculations

The following examples illustrate how to use the real estate formulas.

In Example No.1 the information is obtained for the property and the financial measures calculated.

In Example No. 2 the financial measures such as the Cap Rate are obtained for comparable sales and are used to calculate the Market Value for the subject property.

Example No. 1

Sale Price (Market Value):	\$3,165,000
Potential Gross Income:	\$306,000
Vacancy & Bad Debt Allowance:	4.5%
Operating Expenses:	\$58,000
Mortgage:	\$2,056,000
Mortgage Payment (P+i):	\$180,538
Number of Suites:	30
Total Rentable Area:	24,000 Square feet

Note: All figures are annual

Calculate:	Potential Gross Income Multiplier (PGIM)
	Effective Gross Income Multiplier (EGIM)
	Net Income Multiplier (NIM)
	Capitalization Rate (Cap Rate)
	Return on Equity (ROE)
	Default Ratio (Breakeven) based on:
	Potential Gross Income
	Effective Gross Income
	Debt Service Ratio (DSR)
	Loan to Value Ratio
	Price per Suite
	Price per Square Foot
	Rent per Square Foot per Month
	Operating Cost per Unit per Year
	Operating Cost per Square Foot per Year
	Operating Expense Ratio (OER) based on:
	Potential Gross Income
	Effective Gross Income

1. Construct the Annual Income and Expense Statement

Potential Gross Income	\$306,000
Less Vacancy & Bad Debt Allowance (4.5%)	<u>13,770</u>
Effective Gross Income	\$292,230
Operating Expenses	<u>58,000</u>
Net Operating Income	\$234,230
Less; Debt Service (P+i)	<u>180,538</u>
Cash Flow Before Tax	<u>\$ 53,692</u>

2. Calculate the Financial Measures

Potential Gross Income Multiplier (PGIM):

$$\text{PGIM} = \frac{\text{MV}}{\text{PGI}} = \frac{3,165,000}{306,000}$$

$$= 10.34$$

Effective Gross Income Multiplier (EGIM):

$$\text{EGIM} = \frac{\text{MV}}{\text{EGI}} = \frac{3,165,000}{292,230}$$

$$= 10.83$$

Net Income Multiplier (NIM):

$$\text{NIM} = \frac{\text{MV}}{\text{NOI}} = \frac{3,165,000}{234,230}$$

$$= 13.51$$

Capitalization Rate (Cap Rate):

$$\text{Cap Rate} = \frac{\text{NOI}}{\text{MV}} = \frac{234,230 \times 100}{3,165,000}$$

$$= 7.40\%$$

Return on Equity (ROE) Cash on Cash on Cash

$$\begin{aligned}
 \text{ROE} &= \frac{(\text{NOI} - \text{DS}) \times 100}{\text{EGI}} = \\
 &= \frac{\text{Cash Flow Before Tax} \times 100}{\text{Equity}} \\
 &= \frac{53,692 \times 100}{(3,165,000 - 2,056,000)} \\
 &= 4.84\%
 \end{aligned}$$

Default Ratio (Breakeven)

Based on Potential Gross Income:

$$\begin{aligned}
 \text{Default Ratio} &= \frac{(\text{Operating Expenses} + \text{Debt Service}) \times 100}{\text{Potential Gross Income}} \\
 &= \frac{(58,000 + 180,538) \times 100}{306,000} \\
 &= 77.95\%
 \end{aligned}$$

Default Ratio (Breakeven)

Based on Effective Gross Income:

$$\begin{aligned}
 \text{Default Ratio} &= \frac{(\text{Operating Expenses} + \text{Debt Service}) \times 100}{\text{Effective Gross Income}} \\
 &= \frac{(58,000 + 180,538) \times 100}{292,230} \\
 &= 81.63\%
 \end{aligned}$$

Debt Service Ratio (DSR)

Also called Debt Coverage Ratio (DCR)

Debt Service Coverage Ratio (DSCR)

$$\begin{aligned}
 \text{Debt Service Ratio} &= \frac{\text{Net Operating Income}}{\text{Debt Service (P+i)}} \\
 &= \frac{234,230}{180,538} \\
 &= 1.30
 \end{aligned}$$

Loan to Value Ratio %

$$\begin{aligned}
 \text{Loan to Value Ratio} &= \frac{\text{Loan Amount} \times 100}{\text{Market Value}} \\
 &= \frac{2,056,000 \times 100}{3,165,000} \\
 &= 64.96\%
 \end{aligned}$$

Price per Unit

$$\begin{aligned}
 \text{Price per Unit} &= \frac{3,165,000}{30} \\
 &= \$105,500
 \end{aligned}$$

Price per Square Foot

$$\begin{aligned}
 \text{Price per Sq. Ft} &= \frac{3,165,000}{24,000} \\
 &= \$131.88
 \end{aligned}$$

Rent per Sq. Foot per Mo.

$$\begin{aligned}
 \text{Rent per Sq. Ft} &= \frac{306,000}{24,000 \times 12} \\
 &= \$1.06
 \end{aligned}$$

Operating Costs per Unit per Year

$$\begin{aligned}
 \text{Operating Costs per Unit} &= \frac{\text{Operating Costs}}{\text{No. of Units}} \\
 &= \frac{58,000}{30} \\
 &= \$1,933 \text{ per Unit}
 \end{aligned}$$

Operating Cost per Square Foot per Year

$$\text{Operating Cost per Sq. Ft per Yr.} = \frac{\text{Operating Costs}}{\text{Rentable Area}}$$

$$= \frac{58,000}{24,000}$$

$$= \$2.42 \text{ per Sq. Ft}$$

Operating Expense Ratio (OER)

Based on Potential Gross Income:

$$\text{Operating Expense Ratio} = \frac{\text{Operating Expenses} \times 100}{\text{Potential Gross Income}}$$

$$= \frac{58,000 \times 100}{306,000}$$

$$= 18.95\%$$

Based on Effective Gross Income:

$$\text{Operating Expense Ratio} = \frac{\text{Operating Expenses} \times 100}{\text{Effective Gross Income}}$$

$$= \frac{58,000 \times 100}{292,230}$$

$$= 19.85\%$$

Summary

Potential Gross Income Multiplier (PGIM):	10.34
Potential Gross Income Multiplier (EGIM):	10.83
Net Income Multiplier (NIM):	13.51
Capitalization Rate (Cap Rate)	7.40%
Return on Equity (ROE)	4.84%
Default Ratio (Break even) based on:	
Potential Gross Income	77.95%
Effective Gross Income	81.63%
Debt Service Ratio (DSR)	1.30
Loan to Value Ratio	64.96%
Price per Suite	\$105,000
Price per Square Foot	\$131.88
Rent per Square foot per month	\$1.06
Operating Cost per Suite per Year	\$1,933
Operating Cost per Square Foot per Year	\$2.42
Operating Expense Ratio (OER) based on:	
Potential Gross Income	18.95%
Effective Gross Income	19.85%

Example No 2.

Potential Gross Income:	\$244,800
Vacancy & Bad Debt Allowance:	5.0%
Operating Expenses	\$49,300
Mortgage	\$1,685,000
Mortgage Payment (P+i)	\$147,500
Number of Suites	24
Total Rentable Area	18,720 Square feet

Note: All figures are annual

Calculate the Market Value using the following financial measures

Effective Gross Income Multiplier (EGIM): 9.30
 Net Income Multiplier (NIM): 12.50
 Capitalization Rate (Cap Rate): 8.00%
 Return on Equity (ROE): 5.57%

1. Start by constructing the Annual Income and Expense Statement

Potential Gross Income	\$244,800
Less Vacancy & Bad Debt Allowance (5.0%)	<u>12,240</u>
Effective Gross Income	\$232,560
Operating Expenses	<u>49,300</u>
Net Operating Income	\$183,260
Less; Debt Service (P+i)	<u>147,500</u>
Cash Flow Before Tax	<u>\$ 35,760</u>

2. Calculate the Market Value based on the:**Effective Gross Income Multiplier (EGIM):**

$$MV = \text{Effective Gross Income} \times \text{EGIM}$$

$$= 232,560 \times 9.30$$

$$= \$2,162,808$$

Net Income Multiplier (NIM):

$$MV = \text{Net Operating} \times \text{NIM}$$

$$= 183,260 \times 12.50$$

$$= \$2,290,750$$

Capitalization Rate (Cap Rate):

$$MV = \frac{\text{Net Operating Income} \times 100}{\text{Cap Rate}}$$

$$= \frac{183,260 \times 100}{8.0\%}$$

$$= \$2,290,750$$

Return on Equity (ROE):

$$MV = \frac{(\text{NOI} - \text{DS}) \times 100}{\text{ROE (\%)}} + \text{Mortgage}$$

$$= \frac{(183,260 - 147,500) \times 100}{5.57\%} + 1,685,000$$

$$= \$2,327,011$$

FLASH CARD SETS. QUESTIONS & ANSWERS**GROSS INCOME MULTIPLIER CALCULATIONS****Q1.****What are the two ways to calculate the Gross Income Multiplier?**

Answer Q1**Q2.****Write down the formulas for the:****Gross Income Multiplier (GIM)****Effective Gross Income Multipliers (EGIM)**

Answer Q2**Gross Income Multiplier (GIM) =****Effective Gross Income Multipliers (EGIM =****Q3.****If the Sale price of an income property is \$1,200,000 and Potential Gross Income is \$130,000 calculate the Potential Gross Income Multiplier (PGIM)?**

Answer Q3

Q4.

If the Sale price of an income property is \$1,500,000 and Potential Gross Income is \$125,000 and the Vacancy and Bad Debt Allowance is 5% what is the Effective Gross Income Multiplier (EGIM)?

Answer Q4

Q5.

What are the formulas for calculating the potential selling price of an income property if you know the:

Potential Gross Income Multiplier (PGIM)

Effective Gross Income Multiplier (EGIM)

...from comparables?

How do you calculate the Effective Gross Income?

Answer Q5

Q6.

Based on the following information calculate the potential sales price using:

- 1) Potential Gross Income Multiplier (PGIM) of 12**
- 2) Effective Gross Income Multiplier (EGIM) of 14**

Potential Gross Income: \$120,000

Vacancy and Bad Debt Allowance: 7%

Answer Q6

Q7.

What does Bad Debt Allowance refer to?

Note. Also called “Credit Losses”

Answer Q7

END OF SET

CAP RATE CALCULATIONS**Q1.****Write down the formulas for:**

- 1) Calculating the Cap Rate**
 - 2) Determining the Sales Price using the Cap Rate from comparables**
-

Answer Q1**Q2.****How would you define the Operating Expenses?**

When using a Cap Rate to determine the value of an income property what expenditures should be removed from an Income and Expense statement when calculating the Net Operating Income (NOI)?

Answer Q2

Q3.

Which of the following expenses should be removed from the Income and Expense Statement when using the Net Operating Income (NOI) and the Cap Rate to calculate the value of the property?

- Insurance**
- Property taxes**
- Upgrading the elevator**
- Elevator service contract**
- Landscaping service contract**
- Mortgage Interest costs**
- Repairs to a retaining wall**
- Security**
- Painting 40% of the building exterior**
- Property management**

Put an "X" against expense items that need to be removed when using a Cap Rate to determine the value of an income property.

Answer Q3

Q4.

How do you calculate the Net Operating Income (NOI)?

Answer Q4

Q5.

Using the following information calculate the likely selling price using the Cap Rate approach to determine the value of the income property

Net Operating Income (NOI): \$125,000
Cap Rate: 6% (from comparables)

Answer Q5

Q6.

Using the following information calculate the Cap Rate

Net Operating Income (NOI): \$120,000

Sale Price: \$2,500,000

Answer Q6

END OF SET

UNDERSTANDING CAP RATES**Q1.****The lower the Cap Rate the HIGHER or LOWER the property value?***Circle your answer*

Q2.**Using a Net Operating Income (NOI) of \$120,000****Calculate the property value using a:**

- 1) 5% Cap Rate
 - 2) 10% Cap Rate
-

Answer Q2**Q3****From a BUYERS perspective which do they prefer? A HIGH or a LOWER Cap Rate?****From SELLERS perspective which do they prefer? A HIGH or a LOWER Cap Rate?***Circle your answer*

Q4.**What are two fundamental assumptions that are made when using the Cap Rate to determine the value of an income property?**

Answer Q4

Q5.

Why would an investor buy an income property at a 3.00% Cap Rate and finance with a first mortgage at 5.00%?

Answer Q5

Q6.

The higher the perceived risk the HIGHER or LOWER the Cap Rate?

Circle your answer

Q7.

The higher the anticipated CAPITAL APPRECIATION the HIGHER or LOWER the Cap Rate?

Circle your answer

Q8.

How does a HIGH Cap Rate effect the amount of EQUITY (Down Payment) needed by the investor?

Answer Q8

END OF SET

RETURN ON EQUITY AND CASH ON CASH CALCULATIONS**Q1.**

The Return on Equity (ROE) goes under a number of different names.

Write them down

Answer Q1

Q2.

Write down the formula for calculating Return on Equity (ROE) or Cash on Cash Return.

Answer Q2

Q3.

Calculate the Return on Equity (ROE) or Cash on Cash Return using the following information

Net Operating Income (NOI): \$165,000 per year

Debt Service: \$110,000 per year

Purchase Price: \$1,700,000?

Mortgage: \$1,200,000

Answer Q3

END of SET

FINANCING RATIOS**Q1.****Lenders use two ratios for determining the first mortgage amount*****Write them down together with the formula***

Q2.**Using the following information calculate the:**

- 1) Loan to Value Ratio(LTV)**
- 2) Debt Service Coverage Ratio (DSCR)**

Purchase Price: \$3,700,000**First Mortgage: \$2,500,000****Net Operating Income (NOI): \$230,000 per Yr.****Debt Service: \$175,000 per Yr. Annual (P +I) payment**

Answer Q2**Q3.****How does the lender use the****Loan to Value Ratio (LTV)****Debt Service Coverage Ratio (DSCR)****to determine the loan amount of the first mortgage?**

Answer Q3

Q4.

What are the common numbers that traditional first mortgage lenders use for determining a loan amount for quality properties:

Loan to Value Ratio (LTV)

Debt Service Coverage Ratio (DSCR)

Answer Q4

Q5.

The Debt Service Coverage Ratio (DSCR) and the Loan to Value Ratio (LTV) are helpful in determining whether and when a property can be refinanced.

If the lender uses:

Loan to Value Ratio (LTV): 75% of appraised value

Debt Service Coverage Ratio (DSCR): 1.25

Which one of the following properties has the potential to be refinanced with a larger mortgage?

Property A B C

Circle your answer

	Property A	Property B	Property C
Loan to Value Ratio	77%	72%	69%
Debt Coverage Ratio	1.28	1.20	1.29

.

Q6.

From the lender's perspective what does a:

**Loan to Value Ratio (LTV) of 75% of appraised value and a
Debt Service Coverage Ratio (DSCR) of 1.25 mean?**

Answer Q6

END of SET

EXAMINING OPERATING EXPENSES**Q1.****Write down the formula for the Operating Expenses Ratio (OER)**

Answer Q1**Q2.****How do we use the Operating Expense Ratio (OER)?**

Answer Q2**Q3.****Which is best method for checking expenses?****Using the:**

- 1) Operating Expense Ratio (OER) based on the Potential Gross Income (PGI)?**
- 2) Operating Expense Ratio (OER) based on the Effective Gross Income (EGI)?**

Tick the answer

Q4.

Using the following information calculate the Operating Expenses Ratio (OER) using the Effective Gross income (EGI)

Potential Gross Income (PGI): \$250,000 per Yr.

Vacancy: 5.00%

Operating Expenses: \$95,000 per Yr.

Answer Q4

Q5.

What are typical Operating Expense Ratios for:

- a) Rental apartment buildings
 - b) Commercial buildings. Office, Industrial and Retail
-

Answer Q5

The Operating Expenses Ratio (OER) varies widely depending on the age and condition of the building. For rental apartment buildings the OER varies widely depending on whether the landlord or the tenant pays for the heating of the unit and for hot water

Typical Operating Expense Ratios (OER)

Rental Apartment Buildings

Motels: _____%

Public Storage: _____%

Commercial Buildings: _____%

Office: _____%

Retail: _____%

Industrial _____%

END of SET

CALCULATING AND USING THE DEFAULT RATIO (BREAKEVEN POINT)**Q1.****Write down the formula for calculating the Default Ratio (Breakeven Point)**

Answer Q1**Q2.****Using the following information calculate the Default Ratio or Breakeven Point****Operating Expenses: \$110,000 per Yr.****Debt Service: \$130,000****Effective Gross Income (EGI): \$300,000**

Answer Q2**Q3.****How do we use the Default Ratio or Breakeven Point?**

Answer Q3

Q4.

What does the Default Ratio or Breakeven Point mean?

Answer Q4

END of SET

QUICK TIPS FOR ANALYZING INCOME & EXPENSE STATEMENTS**Q1.****What the best way to analyze individual revenues for a Rental Apartment Building?**

Answer Q1**Q2.****What the best way to analyze individual expenses for a Rental Apartment Building?**

Answer Q2**Q3.****List operating expenses which can be;**

- a) quickly verified
 - b) hard to verify
-

Answer Q3**Operating Expenses that can easily be verified**

Operating Expenses that can hard to verify

END of SET

IMPACT OF FUTURE CAPITAL EXPENDITURES ON VALUE**Q1.**

Write down three examples of future capital expenditures that might lower the price that a buyer is willing to offer the seller.

Answer Q1**Q2.**

Calculate the price that a buyer might offer using the following information:

Net Operating Income \$250,000

Market Cap Rate: 5.00% (From comparables)

As part of the diligence buyer engaged professional engineering firm to assess the building.

The engineers estimated that there is \$625,000 of immediate and urgent repairs including replacing the roof and caulking the leaking windows

Answer Q2**END of SET**

PROFESSIONAL ENGINEERING INSPECTIONS**Q1.**

Why is it important for a buyer to engage a professional engineering firm to inspect a building?

Answer Q1

Q2.

What is concrete rot or cancer?

Answer Q2

Q3.

Show me an example of concrete rot or cancer?

Answer Q3

An example of concrete rot or cancer and damage to the rebar



Q4.

Post tension floor slab systems are widely used in concrete buildings.

- 1) Briefly describe the post tensioning system**
- 2) In older buildings there have been many cases of the failure of post tensioned floor system failing. What are some of the causes of the failure?**

Answer Q3

Q5.

Post tensioning installation example



END of SET

TYPES OF LEASES

Q1.

What is a Gross Lease or a Full Service Lease?

Answer Q1

Q2.

What's the disadvantage of a Gross Lease from a landlord's perspective?

Answer Q2

Q3 .

What's a Modified Gross Lease?

Answer Q3

Q4.

What is an Indexed Lease or a Gross lease with an escalation clause?

Answer Q4

Q5.

What's a Triple Net Lease (NNN)? Also called a Net Lease.

Answer Q5

END of SET

TYPES OF RENT**Q1.****What is the Base Rent?**

Answer Q1**Q2.****Explain “Additional Rent”?**

Answer Q2**Q3.****What is “Free Rent”**

Answer Q3**Q4.****Does “Free Rent” apply to “Additional Rent”?**

Answer Q4

Q5.

Explain “Percentage Rent”

Answer Q5

END of SET

HOW TO DEFINE AND MEASURE SPACE

Q1.

What is the Rentable Area and the Gross Leasable Area (GLA)?

Answer Q1

Q2.

How do you calculate the rentable area in an office building?

Answer Q2

Q3.

Calculate the Base Rent per month for an office building using the following information:

Base Rent: \$30 per Sq. Ft per Yr. based on the "Rentable Area"

Usable Area: 10,000 Sq. Ft. This is the area occupied by the tenant.

Add on Factor: 13%

Answer Q3

Q4

What are the BOMA standards?

Answer Q4

Q5.

What are the danger associated with quoting rents as \$ per Sq. Ft per Yr. or Month?

Answer Q5

When calculating the rent the landlord and the tenant may use different areas to calculate the rent which can lease to misunderstandings as to the amount of the rent.

Q6.

What's the simple solution to the problems created by quoting rent as \$ per sq. Ft per Yr. or Month

Answer Q6

END of SET

TIPS ON HOW TO READ A LEASE**Q1.****Why is it so important to read a lease very carefully?**

Answer Q1**Q2.****When reading a lease ask who pays what? Why?**

Answer Q2**Q3.****What is a Demolition Clause?**

Answer Q3**Q4.****What suggestions were made on how to read a lease?**

Answer Q4

Q5.

How are the renewal rates in a lease determined? Also called “Rent Steps” or “Rent bumps”

Answer Q5

END of SET

INTRODUCTION TO LONG TERM REAL ESTATE INVESTMENT ANALYSIS

Q1.

What is long term real estate investment analysis?

Answer Q1

Q2.

Write down how to develop the cash flow before tax.

Answer Q2

The calculation of the yearly cash flow before tax is:

Q3

Show me an example of an operating cash flow Projection

	Year 1	Year 2	Year 3	Year 4	Year 5
CASH FLOW BEFORE TAX					
Potential Gross Income	499,200	516,900	535,320	553,506	573,372
Less: Vacancy & Credit Loss Allow.	14,256	14,751	15,266	15,772	16,326
Effective Gross Income	484,944	502,149	520,054	537,734	557,046
Operating Expenses	221,374	230,523	240,079	248,972	258,293
Net Operating Income	263,570	271,626	279,975	288,763	298,753
Less: Principal Payments	28,318	30,517	32,886	35,439	38,190
Interest payments	149,040	146,841	144,472	141,919	139,168
CASH FLOW BEFORE TAX	86,212	94,268	102,617	111,405	121,395

Q4

What's the advantage and disadvantage of using cash flow analysis over using the Cap Rate approach to determine the value of an income property?

Answer Q4

Q5.

How long of a time period do you use when developing the yearly cash flows and carrying out long term real estate investment analysis?

Answer Q5

END of SET

DISCOUNTED CASH FLOW ANALYSIS (DCF)

Q1.

Which would you rather have?

1) \$1,000,000 today or 2) \$1,000,000 in 10 years' time?

Circle your answer

Q2.

You are going to loan me \$10,000 and I'm offering you the following two repayment plans. The annual payment is at the end of each year.

Which would you prefer as the lender Plan A or Plan B?

From your perspective which is the less risky option? Plan A or Plan B?

Tick or circle your answers

<u>Year</u>	<u>Plan A</u>	<u>Plan B</u>
0	\$<10,000>	\$<10,000>
1	4,000	6,000
2	5,000	5,000
3	<u>6,000</u>	<u>4,000</u>
Total	\$ 15,000	\$ 15,000
Return (IRR)	_____%	_____%

Q3.

What is the Internal Rate of Return (IRR)?

How do you calculate the Internal Rate of Return?

What is a “Net Cash Flow” report?

Answer Q3

The Net Cash Flow report shows the cash flow from the time the property is acquired until it is sold which is used to calculate the Internal Rate of Return (IRR)

Net Cash Flow (Before Tax)						
Parklane Place 40 Unit Apartment Building - Rental Apartment Building Example						
Yr	Investment	Financing		Operating Cash Flow (Before Tax)	Sales Proceeds (Before Tax)	Net Cash Flow (Before Tax)
		Borrow	Paid Back			
1	\$(3,770,000)	\$2,000,000	-	\$ 86,212	-	\$(1,683,788)
2	-	-	-	94,268	-	94,268
3	-	-	-	102,617	-	102,617
4	-	-	-	111,405	-	111,405
5	-	\$(250,000) Roof Replacement	-	121,395	-	(128,605)
6	-	-	-	131,294	-	131,294
7	-	-	-	141,986	-	141,986
8	-	-	-	152,724	-	152,724
9	-	-	-	163,611	-	163,611
10	-	-	\$(1,594,349)	175,117	\$4,936,12	3,516,930
Total						\$ 2,602,443
Financial Returns (Before Tax) with Financing						
Internal Rate of Return (IRR)			10.61 %	Need to drop the price by \$296,501 to get a 13% Return (IRR)		
Net Present Value (NPV) at 13%			\$(296,501)			

END of SET

USING CAP RATES TO DETERMINE VALUE. ISSUES**Q1.****Explain the difference between the “Apparent Cap Rate” versus the “True Cap Rate”**

Answer Q1**Q2.****What is the impact of “urgent major repairs” have on the purchase price?**

Answer Q2**Q3.****Cap Rates are not useful in determining the value of an income property when the cash flows vary each years Why? Provide an example.**

Answer Q3**END of SET**

DEVELOPING THE NET CASH FLOW AND IRR

Q1. What are the steps involved in carrying out real estate investment analysis?

Answer Q1

Q2.

Developing the Net Cash flows. Example

You have a choice to invest in either Property A and B. Each property will generate the following net cash flows. Which one would provide you with the best overall financial return?

Property A because the Internal Rate of Return (IRR) is 11.62% compared to 10.88% for Property B

Net Cash Flow			
Year	Property A	Property B	
0	\$<1,000,000>	\$<1,200,000>	← (Purchase Price - Mortgage = Equity)
1.	81,000	58,000	← (Net Operating Income – Debt Service)
2.	83,000	60,000	(= Cash Flow before Tax)
3.	84,000	61,000	
4.	87,000	67,000	
5.	87,000	68,000	
6.	89,000	69,000	
7.	<10,000>	70,000	
8.	90,000	112,000	
9.	92,000	115,000	
10.	93,000	117,000	
11.	96,000	119,000	
12	1,950,000	2,500,000	← (Cash Flow Yr. 12 + Sale Proceeds)
Return (IRR)	11.62% ✓	10.88%	Internal Rate of Return (IRR)

END of SET

THE IMPACT OF FINANCIAL LEVERAGE**Q1.****Briefly explain financial leverage to a client using an example**

Answer Q1**Q2.****Using the following information calculate the profit.**

Mary buys 40 acres land of industrial land for \$1,000,000 paying cash. Two years later the property value has increased 10% and she sells it for \$1,100,000. Calculate her profit

Bill buys 160 acres paying \$4,000,000 by borrowing \$3,000,000 from the bank and providing equity or cash of \$1,000,000. In addition he pays \$50,000 of interest each year. Two years later the property value has increased 10% and he sells it for \$4,400,000. Calculate his profit

Answer Q2

Q3.

Using the following information calculate the investment loss.

Mary buys 40 acres of industrial land for \$1,000,000 paying cash. Two years later the property has decreased in value by 10% and she sells it for \$900,000. Calculate her loss.

Bill buys 160 acres paying \$4,000,000 by borrowing \$3,000,000 from the bank and providing equity or cash of \$1,000,000. In addition he pays \$50,000 of interest each year. Two years later the property has decreased in value by 10% and he sells it for \$3,600,000. Calculate his loss.

Answer Q3

Q4.

Write down the two financial measures that you can use to identify the risk associated with using financial leverage.

Answer Q4

Q5.

How do we use the Debt Service Coverage Ratio (DSCR) and the Default Ratio (Breakeven point) to identify the financial risk associated with using financial leverage?

Answer Q5

Q6.

An investor buying an office building is considering three financing options. Based on the following which financing option generates the:

- 1) Highest Return on Investment (Internal Rate of Return)?
- 2) The most risk

	Debt Service Coverage Ratio	Default Ratio Breakeven Point
Option A 50% financing	1.49	79%
Option B 60% financing	1.24	86%
Option C 70% financing	1.06	94%

Highest Return. Option A B C

Highest Risk. Option A B C

Circle your answers

Q7.

How does the financial leverage influence the Return on Investment?

	Loan to Value Ratio	Debt Service Coverage Ratio	Default Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	?
Option B 60% financing	60%	1.24	86%	?
Option C 70% financing	70%	1.06	94%	?

Which option will offer the highest return?

Option A B C

Circle your answer

Q8.

Which is the more risky financing option?

	Loan to Value Ratio	Debt Service Coverage Ratio	Default Ratio Breakeven Point	Internal Rate of Return (IRR)
Option A 50% financing	50%	1.49	79%	13.32%
Option B 60% financing	60%	1.24	86%	14.61%
Option C 70% financing	70%	1.06	94%	16.19%

Option A B C

Circle your answer

Q9.

How does the use of financial leverage impact the Cash Flow before Tax?

Answer Q9

END of SET

VALUING INCOME PROPERTIES WITH DEVELOPMENT POTENTIAL

Q1.

Describe the characteristics of an income property that has development potential of income.

Answer Q1

Q2.

Example. Properties with development potential. Aging supermarkets

Answer Q2

A current trend in large cities where there is a shortage of land is to replace aging super markets with hi-rise condominium towers with retail space on the ground level.



Q3.

What are the two main ways to value an income property?

Answer Q3

1. _____

2. _____

Q4.

What does the “Land Residual” or the “Back Door” approach to valuing land mean?

Answer Q4

Q5.

What are the steps involved in carrying out the Land Residual or Back Door approach to establishing land value?

Answer Q5

Q6.

How can you quickly tell whether you should use the “Income” or the “Land Residual” approach to determine the value on an income property?

Answer Q6

Q7.

A really old, somewhat run down three story office building situated on a large site in a highly desirable area is up for sale for \$5,000,000.

The zoning allows a 9 story building to be constructed on the site.

The Net Operating Income (NOI) is \$45,000 per year.

The market Cap Rates for newer office buildings is 5%.

Calculate the Cap Rate based on the existing buildings Net Operating Income (NOI) and the asking price.

The property tax assessment value was \$4,700.000

Should the property value be based using the Income Approach or the Land Residual approach?

Answer Q7

Q8.

Extreme example of the value of an income property with development potential.

A property with a popular restaurant and the adjacent parking lot sold for \$245,000,000. Why?



The White Spot in the 1600 block W Georgia and the adjoining parking lot sold for 245 million. Vancouver.

Answer Q8

Q9.

Not all sites have development potential. Why?

Answer Q9

Q10 and Q11.

When looking at a development site why should you check the properties beside and behind the site?

Answer Q10 and Q11

END of SET

END of COURSE 101 FLASH CARDS

CLASS EXERCISES

A great way to learn a concept or topic is to explain it another person.

Each session provides you with two opportunities to teach the topic to another class participant.

Instructions

Pair up with another person. One person is called “Partner A” and the other “Partner B”

“Partner A” teaches his/her assigned topic and the “Partner B” teaches his/her assigned topic to “Partner A”

If the group consists of three people rather than two, “Partner C” listens and asks questions.

Session No. 1

Teaching Exercise No. 1

Participant A	Participant B
An investor has asked you what it is the “Cap Rate” and how it is used.	Explain to an investor the benefits and disadvantage of using a Cap Rate to determine the value of an income property
Explain your response to partner B	Explain your response to partner A

Teaching Exercise No. 2

Participant A	Participant B
Explain to Partner B which expense items should be excluded from an Income & Expense Statement when using a Cap Rate to determine the value of an income property.	Explain to Partner A the relationship between the Cap Rate and Risk.

Session No. 2

Teaching Exercise No. 3

Participant A	Participant B
Explain to Partner B which expense items should be excluded from an Income & Expense Statement when using a Cap Rate to determine the value of an income property.	Explain to Partner A the relationship between the Cap Rate and Risk.

Teaching Exercise No. 4

Participant A	Participant B
Explain to Partner B the two measures that a lender uses to determine the mortgage for an income property and how they select which method to use.	Explain to Partner A the Default Ratio or Breakeven Point and how it is used when evaluating an income property.

Session No. 3

Teaching Exercise No. 5

Participant A	Participant B
Explain to a Partner B? what a "Triple Net Lease" means.	Explain to Partner A the potential for misunderstanding between a landlord for an office building when quoting rents as \$23 per Sq. Ft per Year. What is the best way to describe the rent rate?

Teaching Exercise No. 6

Participant A	Participant B
Explain the Internal Rate of Return (IRR) to Partner B and the advantages of using the Internal Rate of Return (IRR) compared to using the Cap Rate	Explain to Partner A what "Discounted Cash Flow Analysis" means.

101. QUIZ No. 1**Q1.**

Using the following information calculate the Cap Rate

Net Operating Income (NOI): \$200,000 per year

Sale Price: \$4,000,000

Start by writing down the formula for calculating the Cap Rate

Answer Q1

Q2.

Put an "X" against the expenses that should be removed from the Income & Expense Statement when using the Cap Rate to determine the property value.

Insurance

Property taxes

Upgrading the elevator

Elevator service contract

Landscaping service contract

Mortgage Interest costs

Security services

Painting 40% of the building exterior

Property management

Q3

Calculate the Return on Equity (ROE) or Cash on Cash Return using the following information

Net Operating Income (NOI): \$125,000 per year

Debt Service: \$75,000 per year

Purchase Price: \$1,700,000?

Mortgage: \$1,000,000

Start by writing down the formula

Answer

Q4.

From a BUYERS perspective which do they prefer?

A HIGH or a LOWER Cap Rate?

Circle your selection

Q5.

Using the following information calculate the:

1) Loan to Value Ratio(LTV)

2) Debt Service Coverage Ratio (DSCR)

Purchase Price: \$2,500,000

First Mortgage: \$1,500,000

Net Operating Income (NOI): \$130,000 per Yr.

Debt Service: \$100,000 per Yr. Annual (P +I) payment

Start by writing down the formulas

Answer

Q6.

Calculate the Base Rent per Sq. Ft per Yr. for an office building using the following information:

Base Rent: \$200,000 per Yr. based on the "Rentable Area"

Usable Area: 9,000 Sq. Ft. This is the area occupied by the tenant.

Add on Factor or Gross Up Factor: 15%

Answer

Q7.

The lower the Cap Rate the HIGHER or LOWER the property value?

Circle your selection

Q8.

The Cap Rate is an excellent approach to valuing Property A below which has the following lease arrangement. TRUE or FALSE

Circle your selection



Q9.

A tenant is entering into a Triple Net Rent (NNN) and has offered the tenant three months free rent.

The tenant interprets this to mean that during the Free Rent period of three months that there are no payments made to the landlord.

Based on the typical arrangements for free rent is the tenant's assumption correct?

YES or NO

Circle your answer

Q10

When calculating the Cap Rate for a commercial building leasing fees should be excluded from the Income & Expenses statement when using a Cap Rate to determine the value.

TRUE FALSE

Circle your answer

Q11

You are considering buying a building which has a Net Operating Income (NOI) of \$240,000

If you wish to buy the property for a 6.00% Cap Rate, how much would you pay for the property?

Answer

Q12

The Loan to Value Ratio (LTV):

- a) ☐ Always determines the loan amount
- b) ☐ Determines the maximum loan subject to the Debt Service or Coverage Ratio
- c) ☐ Is never used by a commercial lender because they always use the Debt Service or Coverage Ratio to determine the loan amount to determine the loan amount

Tick your answer

Q13.

Which Debt Service Coverage Ratio provides the highest loan amount?

- a) 1.19
- b) 1.25
- c) 1.3

Tick the correct answer a)___ b)___ c)___

Q14.

Which Debt Service Coverage Ratio potentially indicates the highest financial risk?

- a) 1.31
- b) 1.07
- c) 1.15
- d) 1.20

Tick the correct answer a)___ b)___ c)___ d)___

Q15.

A "Triple Net (NNN)" lease means that the tenant pays all of the landlords operating expenses.

TRUE FALSE

Circle your answer

Answer

Q16.

In a multi-tenant office building the landlord usually calculates the rent based on the Usable Area because this is the area occupied by the tenant.

True False

Circle your answer

Q17.

How much would you pay for \$130,000 per year forever if wanted a 10% return?

- a) __ \$1,300,000
- b) __ \$130,000
- c) __ \$13,000,000
- d) __ None of these
- e) __ \$13,000

Tick the correct answer

Q18.

Which would you rather have?

- a) Receive \$750,000 today
- b) Receive \$750,000 in 5 years time

Tick the correct answer a)__ b)__

Q19.

The diagram below shows the projected lease rates and renewals for two comparable properties. Which is the most valuable property?

- a) Property A
b) Property B

Tick the correct answer a)___ b)___



Q20.

From a financial perspective which investment provides the:

- 1) Highest Return (IRR) Investment A or Investment B
2) Highest Risk Investment A or Investment B

Circle your answers

Year	Investment A	Investment B
0	<960,000>	<960,000>
1	230,000	320,000
2	250,000	300,000
3	275,000	290,000
4	290,000	275,000
5	300,000	250,000
6	320,000	230,000
Total	\$ 1,665,000	\$ 1,665,000

Q21.

How would you value this property which consists of two buildings with retail on the ground floor and offices above?



- a) Use the income approach such as the Cap Rate or Discounted Cash Flow Analysis approach ☐
- b) Use the "Development Analysis or Land Residual approach ☐

Tick the correct answer a)___ b)___

END