2016 Level II Tutorials

Income Approach to Value

Income Approach

- The income approach is based on the principal that the value of an investment property reflects the quality and quantity of the income it is expected to generate over its life.

Income Approach

- Estimating the value of an income-producing property is done by a method called capitalization.
- In simple terms, capitalization is the division of a present income by an appropriate rate of return to estimate the value of an income stream.

Income Approach

- The model used to estimate the value today of income expected in the future is known as the IRV formula.

Value = Income/Rate

$$V=I/R$$

Income Approach

- The income approach is a means of converting future benefits to present value.
- Essential to the approach is the idea that income to be received in the future is less valuable than income received today.

Income Approach

- Let's look at several principles that are related to this idea.

- Supply and Demand – supply is the quantity of goods available at a given price schedule; demand is the quantity of goods desired at that price schedule.

Income Approach

- Supply and demand interact to establish prices in the marketplace.
- In general, markets that are more competitive generate sales prices that reflect true market value.
- Less competitive markets may produce prices that reflect investment value or value in use.

Income Approach

- Anticipation – the idea that present value is determined by future benefits.
- Because a dollar to be received in the future has less value than a dollar held now, the value of future dollars anticipated from the ownership of real estate should be adjusted to present value according to the time they are expected to be received.

Income Approach

- Substitution – A property's maximum value is set by the lowest cost or price at which another property of equivalent utility can be acquired.
- The price of substitutes also determines demand.

Income Approach

- Competition – The attempt by two or more buyers or sellers to buy or sell similar commodities, influences the rate of return on invested capital.
- The rate of return, reciprocally, influences both supply and demand in a particular market.

Income Approach

- Capitalization is the conversion of a single income stream or a series of income streams into a lump-sum value.
- A capitalization rate converts net operating income into an estimate of value.
- The capitalization rate is made up of several components – a discount rate, a recapture rate and an effective tax rate.

Income Approach

- The <u>discount rate</u> = required rate of return <u>*on*</u> investment.
  - Interest rate = required rate of return on borrowed funds
  - Yield = required rate of return on equity

The discount rate is made up of an interest rate and a yield rate

Income Approach

- Recapture rate = rate of return *of* investment
- Provides for the recovery of capital on an annual basis
- Applies only to that part of the investment that will waste away during the investment period.

Income Approach

- Effective tax rate is the property tax rate expressed as a percentage of the market value
- It is the proportion of tax dollars to market value, and the only way to compare the effect of property taxes across jurisdictions.

Income Approach

- For example, a property with a market value of $1,000,000 and a total property tax of $27,000 has an effective tax rate of 0.027 or 2.7 percent.
  ($27,000 / $1,000,000 = 0.027)

Income Approach

- Let's take a look now at how buyers see the risks and benefits of real estate investment.
- Why do investors choose income-producing real estate from a wide array of investment opportunities? Because they plan to receive a larger sum in the future than the amount invested now.

Income Approach

- Investors also try to choose the highest yield with the lowest risk.

- In determining where to invest dollars, the investor analyzes the opportunities available and asks, “Should I make this investment?”

Income Approach

- To answer that question, the investor asks more questions:
  - How much will it cost?
  - How much will I get back?
  - When will I get it back?
  - What are the risks?
  - What is the return on investments of similar risk?

Income Approach

- Overall objectives that an investor wants:
  - A return **on** the investment = discount
    - Periodic Income (dividends, interest, rent)
    - Growth income (capital gain upon the sale of an investment)
    - A combination of both periodic and growth income

— A return **of** the investment = recapture

Income Approach

- The income approach looks at factors that influence the behavior of investors
  - Safety/Risk
  - Liquidity
  - Size of the investment
  - Use as collateral
  - Leverage
  - Holding period

Income Approach

- Amount of management required
- Potential for appreciation
- Income tax advantages

Income Approach

- Safety/Risk
  - Risk is relative and no investment is risk free.
  - The more safe an investment is, the less return (discount) an investor expects.
  - Conversely, the more risk involved in an investment, the higher the return (discount) an investor expects.

Income Approach

- <u>Liquidity</u>
  - Refers to the ease of converting the investment into cash.
  - Highly liquid investments convert into cash easily, and, therefore, the investors expect a lower return (discount) than he/she would for an investment that takes longer, or is harder, to convert to cash.

Income Approach

- Size of investment
  - Some investments require a large sum of money to get into; others do not.
  - Usually, the greater the amount of cash required to be invested, the greater the return (discount) expected by the investor.

Income Approach

- Use as collateral
  - Collateral refers to pledging the investment as security for a loan; in the case of real estate investments, this is done through the use of mortgages.
  - This is one way to make the investment more liquid and to minimize the cash required to purchase the investment.

Income Approach

- Leverage
  - Refers to the borrowing of funds to purchase an investment in the hope of earning a greater return on the investment than the cost of borrowing the funds.
  - The lender takes on part of the risk in return for the interest they charge the borrower.

Income Approach

- Holding Period
  - The holding period is the amount of time the investor must keep the investment in order to attain his/her investment objective.
  - Usually, the longer the holding period, the higher the return (discount) the investor expects.

Income Approach

- Amount of management required
  - Investments require time on the part of the investor, or a professional manager they hire, to keep track of the investment.
  - The more time required to manage the investment, the higher the return (discount) expected by the investor.

Income Approach

- Potential for appreciation
  - Some investments have the potential to increase in value (capital gain) over the holding period, others do not.
  - An investor who expects the property to appreciate over time may accept a lower return (discount) during the holding period because they are willing to wait until the end of the holding period and get it in a lump sum (capital gain).

Income Approach

- Income tax advantages
  - Some investments offer income tax advantages, others do not.
  - May be in the form of a lower effective rate of taxation on capital gains, depreciation allowance to offset income, and/or the investor is allowed to subtract interest on a loan taken out to purchase the investment.

Income Approach

- It is important to understand the terminology used in the Income Approach.

- On the following slides are common terms and their definitions.

Income Approach

- **Amortize** – process of repaying a loan by means of a series of scheduled payments; typically the scheduled payments include interest charges and principal repayment.
- **Annuity** – right to receive money in (usually) fixed amounts and at regular intervals for a definite or indefinite period of time.

Income Approach

- **<u>Capital Gain</u>** – profit realized upon sale of a property if the sale price exceeds the cost of acquisition and the cost of any improvements the seller has added.

Income Approach

- **Capitalization** – mathematical process used to convert income into value.
  - Direct Capitalization – a method which uses one year's income.
  - Yield Capitalization – a method which uses a series of future incomes.

Income Approach

- **Cash Flow** – amount of income remaining after subtracting debt service and/or income taxes from net operating income.
  - Before-tax Cash Flow – Amount of income remaining after subtracting debt service from net operating income.
  - After-tax Cash Flow – Amount of income remaining after subtracting income taxes from before-tax cash flow.

Income Approach

- **Contract Rent** – actual amount of rent that a tenant pays a landlord as specified in the lease.
- **Debt Service** – payments of principal and interest on a mortgage.
- **Discounting** – process of estimating the present worth (value) of an anticipated future income stream.

Income Approach

- **Discount Rate** – rate of return **on** an investment; expressed as a percentage.
- **Effective Gross Income (EGI)** – potential gross rent, less vacancy and collection loss, plus miscellaneous income.
- **Effective Tax Rate** – annual property tax burden expressed as a percent of the property's market value.

Income Approach

- **<u>Equity</u>** – net value of property after liens, mortgages, and other charges are deducted; amount of capital (dollars) the titleholder has invested in a property. At the date of purchase, equity is equal to the cash down payment required.
- **<u>Equity Yield Rate</u>** – required rate of return on equity capital.

Income Approach

- **Expense** – a cost which is chargeable against income (rent).
- **Expense Ratio** – ratio of expenses to gross income: expenses divided by effective gross income.
- **Factor** – reciprocal of a rate; one (1) divided by a rate.

Income Approach

- **<u>Fixed Expenses</u>** – expenses that do not vary with occupancy and have to be paid whether the property is occupied or not (property taxes, mortgage payments, etc.)

Income Approach

- **Gross Income Multiplier (GIM)** – a simple capitalization technique that uses the relationship between a property's effective gross income and its market value. GIM is calculated by dividing a property's market value by its annual effective gross income.

Income Approach

- **Gross Rent Multiplier** – same as GIM except the GRM is calculated by dividing a property's market value by its effective monthly gross income.
- **Gross Lease** – a lease which calls for the landlord to pay all the expenses of operating the property.

Income Approach

- **Ground Rent** – amount of money paid by a tenant to a landlord to use vacant land.
- **Holding Period** – length of time an investor must keep an investment in order to achieve his/her investment objectives.

Income Approach

- **Improper Expenses** – expenses incurred in the ownership of income-producing property that are not used to calculate value in the income approach.
- **Income** – payments to its owner (landlord) that a property is able to produce from charging rent to a tenant.

Income Approach

- **Income Stream** – series of payments received from an investment during the holding period of the investment.
- **Interest (Interest Rate)** – cost of borrowing money; percentage charged to borrow money.
- **Investment Value** – value of an investment property to a particular investor; may not equal market value.

Income Approach

- **IRV** – notation for the basic capitalization formula used in the income approach where: **I**ncome divided by **R**ate equals **V**alue.

  - **V = I ÷ R**

Income Approach

- **<u>Lease</u>** – a written contract by which the landlord (lessor) transfers the rights to occupy and use property to a tenant (lessee) for a specified period of time in return for a specified payment (rent).

Income Approach

- **<u>Gross Lease</u>** – a lease which calls for the landlord to pay all the expenses of operating the property.
- **<u>Net Lease</u>** – a lease which calls for the tenant to pay all the expenses of operating the property.

Income Approach

- **Leased Fee Estate** – landlord's (lessor's) interest/rights in a property.
- **Leasehold Estate** – tenant's (lessee's) interest/rights in a property.
- **Lessee (Tenant)** – person receiving a possessory interest in property under the terms of a lease.

Income Approach

- **Lessor (Landlord)** – person who holds title to a property but has granted the use of the property to another (tenant/lessee).
- **Leverage** – process of borrowing funds to purchase an investment in the hope of earning a greater return on the investment than the cost of borrowing the funds.

Income Approach

- **Liquidity** – ease by which an investment can be converted into cash.
- **Loan-to-Value Ratio** – percentage of a property's market value a lender (mortgagee) will loan a borrower (mortgagor).

Income Approach

- **Market Rent** – the rent prevailing in the market on the date of appraisal; the rent a prospective tenant would pay to occupy the property if it were vacant.
- **Mortgage** – contract in which a borrower (mortgagor) pledges title to a property as security for a loan from a lender (mortgagee).

Income Approach

- **Mortgagee** – lender.
- **Mortgagor** – borrower.
- **Net Income** – rent expected from a property after deduction of allowable expenses.
- **Net Lease** – lease which provides for the tenant (lessee) to pay all the expenses of operating the property.

Income Approach

- **Net Leasable Area (NLA)** – area within a building which is actually occupied by a tenant or tenants; does not include any common areas.
- **Net Operating Income (NOI)** – annual income remaining after deduction of allowable expenses.

Income Approach

- **Nominal Tax Rate** – actual tax rate shown on a tax bill; expressed as millage, dollars per hundred or dollars per thousand.
- **Occupancy Ratio** – occupied units/space expressed as a percentage of total units/space.

Income Approach

- **Operating Expenses** – costs necessary to maintain the flow of rent for a property.
- **Operating Statement** – written summary of annual income and expenses on a property.
- **Overall Rate (OAR)** – a capitalization rate that includes all requirements of discount, recapture, and effective tax rates that is used in direct capitalization.

Income Approach

- **Potential Gross Income (PGI)** – total market rent that a property could annually generate if it were 100% occupied.
- **Present Worth** – value of an investment produced by discounting future income.
- **Rate** – a number expressed as a % or its decimal equivalent.

Income Approach

- **Recapture** – act of getting back the dollars put into an investment.
- **Recapture Rate** – rate of return of dollars put into an investment; expressed as a percentage.
- **Reciprocal** – result obtained when one (1) is divided by a given number.

Income Approach

- **Rent** – dollars paid by a tenant (lessee) to a landlord (lessor) in return for occupying and using the landlord's property.
  - **Contract Rent** – actual amount of rent that a tenant pays a landlord as specified in the lease.

Income Approach

- **Market Rent** – the rent prevailing in the market on the day of the appraisal; the rent a prospective tenant would pay to occupy the property if it were vacant.

Income Approach

- **Reserve for Replacements** – an operating expense for replacement of capital items such as roofs or HVAC equipment. These are expenses that do not occur every year but do need periodic replacement. It is assumed a prudent owner will take an amount from rent collections each year, deposit it in a reserve account, and pay for these types of expenses from the reserve account and not out of current year's collections.

Income Approach

- **Reversion** – right of possession returning to the landlord on the termination of a lease; value of the investment at the end of the holding period.
- **Sale-Leaseback** – a sale and subsequent lease given by the buyer back to the seller as a part of the same transaction.

Income Approach

- **Tenant** – a person who occupies/uses a property but does not hold title.
- **Time Value of Money** – the amount of money anticipated as future income is always worth less than an equal amount in hand at the present time.

Income Approach

- **Vacancy and Collection Loss** – a loss from potential gross income (PGI) caused by vacant space and failure to collect rents.
- **Yield Capitalization** – a capitalization method that uses a series of future incomes.

Income Approach

- There are two formulas which are used in the income approach to value:

1. **<u>IRV formula</u>**
   - Used in direct capitalization
   - Uses a rate to convert one year's income into value

Income Approach

2. **<u>VIF formula</u>**
   - Used in yield capitalization
   - Uses a factor to convert all future years' income into value

We will look at both formulas; however we will only be using the IRV formula for this class.

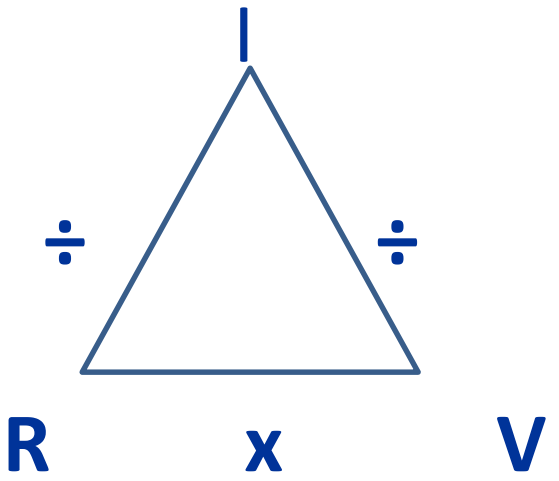
Income Approach

<u>IRV Formula</u>

I = Income

R = Rate

V = Value



In appraising income property, we use:

I = annual net operating income (NOI)

R = capitalization rate (OAR)

V = market value

Income Approach

IRV Formula

- **I (Income) = R x V**
- **R (Rate) = I ÷ V**
- **V (Value) = I ÷ R**

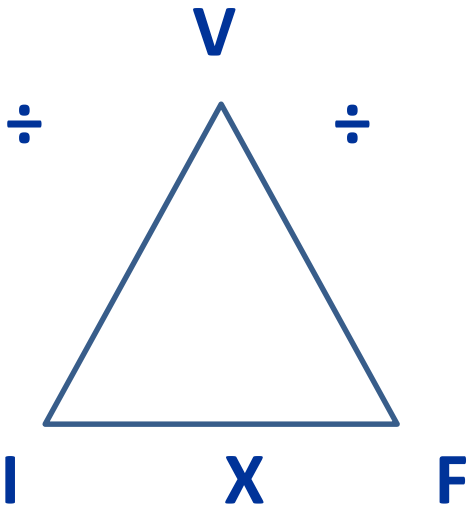
Income Approach

<u>VIF Formula</u>

V = Value

I = Income

F = Factor



In appraising income property, we use:

V = market value

I = annual Effective Gross Income (EGI)

F = compound interest factor

Income Approach

VIF Formula

- **V (Value) = I x F**
- **I (Income) = V ÷ F**
- **F (Factor) = V ÷ I**

Income Approach

- All we need to process the income approach to value are two things:
  - **Net operating income (I)**
  - **Capitalization rate (R)**

Once we have these two items, we simply plug them into the IRV Formula to get the value of the property. **V = I ÷ R**

Income Approach

- The **Income (I)** we will plug into the IRV formula is the annual net operating income (NOI).
- It is developed by reconstructing an annual operating statement for the subject property.

Income Approach

- It is called a “reconstructed” operating statement because there are certain items the owner may report in the actual statement that are not considered by appraisers.
- In addition, the “reconstructed” statement shows what the property can expect to net based on market information.

Income Approach

Potential Annual Gross Income (**PGI**)
Less Annual Vacancy & Collection Loss (**V&C**)
Plus Miscellaneous Income (**Misc. I**)
Equals Effective Gross Income (**EGI**)
Less Operating Expenses (**EXP**)
Less Reserve for Replacements (**RR**)
Equals Net Operating Income (**NOI**)

Income Approach

- **Potential Gross Income (PGI)** – total market rent that a property could annually generate if it were 100% occupied.

- This is developed by looking to see what the market (comparable properties) are collecting for rent for the same type of space as the subject. It may, or may not, be equal to the subject's current rent (contract rent).

Income Approach

	Efficiency	1 BR	2 BR	3 BR
Subject	$250	$400	$550	$650
Comp 1	$250	$450	$600	$700
Comp 2	$250	$450	$600	$725
Comp 3	$225	$450	$600	$725
Comp 4	$250	$450	$600	$725
Mkt. Rent	$250	$450	$600	$725

Income Approach

- We would then apply the market rent to the number of units in the subject property to get its potential gross income (PGI).

Income Approach

• Efficiency	10 apts. @ $250 =	$ 2,500
• 1 BR	40 apts. @ $450 =	$18,000
• 2 BR	40 apts. @ $600 =	$24,000
• 3 BR	10 apts. @ $725 =	$ 7,250
Totals	100 apts.	$51,750

- $51,750 x 12 months = $621,000 PGI

Income Approach

- Turn to Problem 1, Development of Potential Gross Income, and determine the amount of PGI you will use in the reconstructed operating statement for the Gateway Shopping Center.

Class Problem # 1

Development of Potential Gross Income

You are appraising a neighborhood strip shopping center known as Gateway Shopping Center. The leases with the tenants were entered into at various times over the past five years. The current rent roll follows:

Tenant	Leasable Area	Annual Rent
Kathy's Cards and Gifts	2,500 SF	$37,500
Sports Galore	2,500 SF	$40,000
Deuce Hardware	4,000 SF	$40,000
Palace Restaurant	3,000 SF	$60,000
Mother Goose Shoes	2,000 SF	$40,000
House of Beauty	1,500 SF	$37,500
Safe Insurance	800 SF	$14,400
Vacant Retail Space	2,500 SF	$0
	18,800 SF	$269,400

You have researched the market and found recently negotiated rents for competing shopping centers run $25.00/SF for space regardless of size or build outs.

What Potential Gross Income (PGI) will you use in your reconstructed operating statement for the Gateway Shopping Center?

Class Problem # 1 Answer

Development of Potential Gross Income

What Potential Gross Income (PGI) will you use in your reconstructed operating statement for the Gateway Shopping Center?

Tenant	Leasable Area	Market Rent	PGI
Kathy's Cards and Gifts	2,500 SF	$25	$62,500
Sports Galore	2,500 SF	$25	$62,500
Deuce Hardware	4,000 SF	$25	$100,000
Palace Restaurant	3,000 SF	$25	$75,000
Mother Goose Shoes	2,000 SF	$25	$50,000
House of Beauty	1,500 SF	$25	$37,500
Safe Insurance	800 SF	$25	$20,000
Vacant Retail Space	2,500 SF	$25	$62,500
	18,800 SF		$470,000

OR	18,800	Times	$25
			$470,000

The Potential Gross Income is : $470,000

Income Approach

- **<u>Vacancy and Collection Loss</u>** – a loss from potential gross income (PGI) caused by vacant space and failure to collect rents.

- Most properties suffer some vacancy loss if for no other reason than tenant turnover. Therefore, in reconstructing the operating statement, we give an allowance for vacancy and for the inability to collect rents that are due.

Income Approach

- This is developed by looking to see what the market (comparable properties) are incurring as a vacancy and a collection loss rate. It may, or may not, be equal to the subject's current collection loss (contract rent).

Income Approach

- To calculate a vacancy rate, you divide the number of vacant units by the total number of units for each property, subject and comparables, to get a vacancy rate (percentage) for each property.
  - For example, if you have 6 vacant units in a 120 unit building, your vacancy rate is 5% (6 ÷ 120 = .05 x 100)

Income Approach

- Determine a vacancy rate for each comparable property. Once you have calculated a vacancy rate for each of the comparables, you will then calculate the median vacancy rate by using each of the comparables.

Income Approach

- The Collection Loss Rate works the same way.
- Divide the Uncollected Rents by the Rents Receivable. The percentage is the Collection Loss Rate for that property. You will then calculate the median collection loss by using the collection loss from each of the comparables.

Income Approach

- Now turn to Problem 2 – Development of Vacancy and Collection Loss Rate.

- Determine what Vacancy and Collection Loss Rate (total) you would use.

Class Problem # 2

Development of Vacancy and Collection Loss

You have researched the properties that compete with the Gateway Shopping Center and have obtained the following information:

Property	Vacant Space	Total Leasable Area	Rents Receivable	Rents Collected
Riverton SC	1,200 SF	20,000 SF	$475,000	$469,775
Eagle Ridge SC	1,050 SF	18,000 SF	$396,000	$392,440
Chatham SC	1,600 SF	26,000 SF	$524,000	$518,760
Hyde Park SC	850 SF	14,000 SF	$322,000	$318,780
Gateway SC (Subject Property	2,500 SF	18,800 SF	$269,400	$269,400

What Vacancy and Collection Loss Rate (V & C) will you use in your reconstructed operating statement for Gateway Shopping Center?

Class Problem # 2 Answer

Development of Vacancy and Collection Loss

What Vacancy and Collection Loss Rate (V & C) will you use in your reconstructed operating statement for Gateway Shopping Center?

Property	Vacant Space	Total Leasable Area	Rents Receivable	Rents Collected
Riverton SC	1,200 SF	20,000 SF	$475,000	$469,775
Eagle Ridge SC	1,050 SF	18,000 SF	$396,000	$392,440
Chatham SC	1,600 SF	26,000 SF	$524,000	$518,760
Hyde Park SC	850 SF	14,000 SF	$322,000	$318,780
Gateway SC (Subject Property)	2,500 SF	18,800 SF	$269,400	$269,400

Vacancy Rate Calculation

Property	Vacant Space	Total Leasable Area	Vacancy Rate
Riverton SC	1,200 SF	20,000 SF	6%
Eagle Ridge SC	1,050 SF	18,000 SF	6%
Chatham SC	1,600 SF	26,000 SF	6%
Hyde Park SC	850 SF	14,000 SF	6%
Gateway SC (Subject Property)	2,500 SF	18,800 SF	13%

Vacancy Rate Calculation **6%**

Collection Loss Rate Calculation

Property	Rents Receivable	Rents Collected	Uncollected Rents	Rents Receivable	CL Rate
Riverton SC	$475,000	$469,775	$5,225	$475,000	1%
Eagle Ridge SC	$396,000	$392,440	$3,560	$396,000	1%
Chatham SC	$524,000	$518,760	$5,240	$524,000	1%
Hyde Park SC	$322,000	$318,780	$3,220	$322,000	1%
Gateway SC (Subject Property)	$269,400	$269,400	$0	$269,400	0%

Collection Loss Rate Calculation 1%

The total Collection and Vacancy Rate is: 7%

Income Approach

- **<u>Miscellaneous Income</u>** – income received by the property from sources other than the primary rent. For example, rental of the clubhouse for parties, income from vending machines or forfeited rent deposits.
- Estimated by looked at the historical operating statements for the property.

Income Approach

- **<u>Effective Gross Income (EGI)</u>** – potential gross income, less vacancy and collection loss, plus miscellaneous income. Following is an example of how to compute the EGI: Assume the Potential Gross Income is $621,000, Vacancy and Collection Loss is 6% and no Miscellaneous Income. What is the EGI?

PGI	$621,000
- V&C @ 6%	(37,260)
+ Misc. Income	-0-
= EGI	$583,740

Income Approach

- Now turn to Problem 3, Development of Effective Gross Income. You will use your answers from Problem 1 and 2 for this problem. Also assume miscellaneous income in the amount of $5,000 annually for the Gateway Shopping Center.

Class Problem # 3

Development of Effective Gross Income

Use the information from Problems 1 and 2 and develop an Effective Gross Income (EGI). Also, historically the Gateway SC has miscellaneous income of $5,000 annually.

What is the Effective Gross Income (EGI) for the subject property?

Class Problem # 3 Answer

Development of Effective Gross Income

What is the Effective Gross Income (EGI) for the property?

Potential Gross Income (Problem 1)	PGI	$470,000
Less: Vacancy and Collection Loss (Problem 2)	V & C (7%)	-$32,900
Miscellaneous Income	Misc Inc	$5,000
Effective Gross Income	EGI	$442,100

The Effective Gross Income for the subject property is: $442,100

Income Approach

- Operating Expenses – costs of operating the property

- Expenses are divided into two categories:
  - **Allowable Expenses** – expenses that are ordinary and typical and are necessary to keep the property functional and rented competitively.

Income Approach

- **Improper Expenses** – expenses incurred in the ownership of income-producing property that are not used to calculate value in the income approach. These are not entered into the reconstructed operating statement.

Income Approach

- **<u>Allowable Expenses (EXP)</u>**
  - Management
  - Wages, Salaries and Benefits
  - Utilities
  - Materials & Supplies
  - Repairs and Maintenance
  - Insurance
  - Miscellaneous Expenses

Income Approach

- **<u>Improper Expenses</u>**
  - Depreciation
  - Debt Service
  - Income Taxes
  - Capital Improvements
  - Owner's Business Expenses
  - Property Taxes (NOTE: These are a proper expense, but in appraising for property tax purposes, they are accounted for in the capitalization rate)

Income Approach

- **<u>Calculating Allowable Expenses</u>**
- In calculating the proper expenses to put into the reconstructed operating statement for a property, you must compare the current expenses with past years' expenses, compare current expenses with those of comparable properties, and contact the owner/manager regarding expense items in question. Expenses, like other items in the income approach must be supported by market comparables.

Income Approach

- Now turn to Problem 4, Development of Allowable Expenses, and determine which will be used as “Stated”, which ones will have to be “Pro-rated” and which ones will fall into the category “Eliminate”.

Class Problem # 4

Development of Allowable Expenses

Given below is the statement of expenses for the Gateway SC as prepared by the owner's accountant. They are actual bank withdrawals and are assumed to be correct. In your analysis of the statement for appraisal purposes, you have decided that some items can be used as stated, others need to be eliminated, and some need to be pro-rated. Indicate with an "X" which items you would use as stated, pro-rated (over more than one year), or would eliminate from your reconstructed operating statement.

	As Stated	Pro-Rate	Eliminate
A. Management Fees			
B. Advertising			
C. Maintenance Personnel Salaries			
D. Maintenance Personnel Benefits			
E. Debt Service on Mortgage			
F. Water and Sewage Fees			
G. Electricity			
H. Gas for Heating			
I. New Roof			
J. Miscellaneous Repairs			
K. Supplies			
L. Casualty Insurance--3 year policy			
M. Liability Insurance			
N. Snow Removal			
O. Income Tax			
P. Donation, Christmas Gift Expense			
Q. Real Estate Taxes			

Class Problem # 4 Answer

Development of Allowable Expenses

Indicate with an "X" which items you would use as stated, pro-rated (over more than one year), or would eliminate from your reconstructed operating statement.

	As Stated	Pro-Rate	Eliminate
A. Management Fees	x		
B. Advertising	x		
C. Maintenance Personnel Salaries	x		
D. Maintenance Personnel Benefits	x		
E. Debt Service on Mortgage			x
F. Water and Sewage Fees	x		
G. Electricity	x		
H. Gas for Heating	x		
I. New Roof		x	
J. Miscellaneous Repairs	x		
K. Supplies	x		
L. Casualty Insurance--3 year policy		x	
M. Liability Insurance	x		
N. Snow Removal	x		
O. Income Tax			x
P. Donation, Christmas Gift Expense			x
Q. Real Estate Taxes			x

Income Approach

- **<u>Reserve for Replacements</u>** – an operating expense for replacement of capital items such as roofs or HVAC equipment. These are expenses that do not occur every year, but do need periodic replacement. It is assumed that a prudent owner will take an amount from rent collections each year, deposit it in a reserve account, and pay for these types of expenses from the reserve and not out of current year's collections.

Income Approach

- The reserves are actually allowable expenses that are pro-rated over the life of the capital item that has to be replaced periodically.

Income Approach

- They are calculated as follows:
  1. Estimate the economic life of the item.
  2. Estimate its replacement cost new (RCN)
  3. Calculate the percentage of reserve per year by dividing 100% by the economic life.
  4. Multiply the RCN by the % per year to get the amount of annual reserve.

Income Approach

- Example – Roof on an apartment bldg.
  1. Estimate the economic life – 20 years
  2. Estimate the RCN - $20,000
  3. Calculate the percentage of reserve per year by dividing 100% by the econ. life –

     100% ÷ 20 = 5%
  4. Multiply the RCN by the % per year to get the amount of annual reserve

     $20,000 x 5% = $1,000

Income Approach

- Now, turn to Problem 5, Development of Reserve for Replacements and set up the reserve account as you would for the reconstructed operating statement and determine the amount of annual expense for these items.

Class Problem # 5

Development of Reserve for Replacements

The following are capital items on the Gateway SC that have to be replaced periodically.

The roof costs $30,000 to replace and typically lasts 15 years.
The HVAC equipment lasts 20 years and costs $20,000 to replace.
The parking lot has to be re-paved every 10 years at a cost of $40,000.
The awnings and store fronts need updated every 15 years at a cost of $50,000.

Set up the Reserve for Replacements Account that you will use in your reconstructed operating statement. Determine the annual expense for these items.

Class Problem # 5 Answer

Development of Reserve for Replacements

Set up the Reserve for Replacements Account that you will use in your reconstructed operating statement. Determine the annual expense for these items.

Item	Cost to Replace		Typical Life		Reserve
Roof	$30,000		15		$2,000
HVAC	$20,000		20		$1,000
Parking Lot	$40,000		10		$4,000
Store Fronts	$50,000		15		$3,333
		Total			$10,333

The total Reserve for Replacements would be : $10,333

Income Approach

- **Expense Ratio** – ratio of expenses to gross income; expenses plus reserve for replacement divided by effective gross income.
- An expense ratio is a simplified way of determining total expenses and reserves without having to account for each expense item separately.

Income Approach

- An expense ratio is calculated as follows:

(Expenses + Reserves) ÷ EGI = Expense Ratio

Income Approach

- Now turn to Problem 6 – Development of Expense Ratio, and determine what percentage you will use in the reconstructed operating statement.

Class Problem # 6
Development of Expense Ratio

An expense ratio is the total allowable expenses, including reserves, stated as a percentage of Effective Gross Income (EGI).

You have obtained the following information on properties comparable to the Gateway SC:

Property	EGI	Expenses	Reserve for Replacements
Riverton SC	$469,775	$135,330	$15,000
Eagle Ridge SC	$392,440	$117,500	$12,000
Chatham SC	$518,760	$148,000	$18,000
Hyde Park SC	$318,780	$88,020	$10,800

What expense ratio should you use in your reconstructed operating statement for Gateway SC?

Class Problem # 6 Answer

Development of Expense Ratio

What expense ratio should you use in your reconstructed operating statement for Gateway SC?

Property	Expenses	Reserve for Replacements	Total Expenses	EGI	Expense Ratio
Riverton SC	$135,330	$15,000	$150,330	$469,775	32%
Eagle Ridge SC	$117,500	$12,000	$129,500	$392,440	33%
Chatham SC	$148,000	$18,000	$166,000	$518,760	32%
Hyde Park SC	$88,020	$10,800	$98,820	$318,780	31%

The Expense Ratio to use is	32%

Income Approach

Reconstructed Operating Statement

PGI

-V&C

+ Misc. I

= EGI

- Exp

- RR

= NOI

Income Approach

- If you turn to Problem 7, Reconstructed Operating Statement and use the information you developed in Problems 1,2, 3 and 6 you should be able to develop the statement. Use the formula on the preceding slide as your guide.

Class Problem # 7

Reconstructed Operating Statement

Using the information you developed for Problems 1, 2, 3, and 6, reconstruct an operating statement for the Gateway Shopping SC. Then develop its Net Operating Income (NOI).

Class Problem # 7 Answer

Reconstructed Operating Statement

Using the information you developed for Problems 1, 2, 3, and 6, reconstruct an operating statement for the Gateway Shopping SC. Then develop its Net Operating Income (NOI).

Potential Gross Income (Problem 1)	PGI	$470,000
Less: Vacancy and Collection Loss (Problem 2)	V & C	-$32,900
Miscellaneous Income	Misc Inc	$5,000
Effective Gross Income	EGI	$442,100
Less: Expenses (at 32%)	-Exp	($141,472)
Less: Reserves for replacements	in expenses	$0
Net Operating Income	NOI	$300,628

The subject property's net operating income (NOI) is: $300,628

Income Approach

- **<u>Capitalization Rates</u>** express the relationship between income and value.
- Proper selection of a capitalization rate is necessary in order to produce a valid value estimate.
- A small difference in the capitalization rate will result in estimates of value differing by thousands of dollars.

Income Approach

- Capitalization Rate can be composed of various rate components. These components are:
  - **Discount Rate** – allows for return **on** the investment
  - **Recapture Rate** – allows for return **of** the investment
  - **Effective Tax Rate** – allows for payment of the property taxes on the investment

Income Approach

- **Discount Rate – percentage that allows for return on the investment**
- The discount rate reflects the compensation necessary to attract investors to give up liquidity, defer consumption, and assume the risks of investing. It is the rate of return on total property investment to meet investment requirements.

Income Approach

- Three methods to determine:
  - Summation Method (build-up method)
  - Band-of-Investment Method
  - Market Comparison Method

Income Approach

- **Recapture Rate – percentage that allows for return of the investment**
- The recapture rate is the annual dollar requirement for returning to the investor a sum equal to the value of the improvements at the end of a given period of time. It is the annual offset against the depreciation on the improvements.

Income Approach

- Two methods to determine:
  - Reciprocal of the remaining economic life method
  - Market comparison method

Income Approach

- **<u>Effective Tax Rate</u> – percentage that allows for payment of the property taxes on the investment.**
- The effective tax rate expresses the ratio between the property value and the current tax bill. Since we do not expense the property taxes in the reconstructed operating statement, they must be accounted for in the capitalization rate.

Income Approach

- Two methods to determine:
  - EAT formula method
  - Market comparison method

Income Approach

- Once we have the three rate components, we can then develop a capitalization rate to use in the IRV formula.
- The capitalization rate we develop must match the income we are capitalizing. In other words, whatever the investor needs to take out of the income, we need to include in the cap rate.

Income Approach

- There are three types of capitalization rates:
  1. Land Cap Rate (R_L) – used when we are capitalizing land income.
  2. Improvement (Bldg.) Cap Rate (R_I) – used when we are capitalizing building/improvement income.
  3. Overall Capitalization Rate (R_O) or (OAR) – used when we are capitalizing the income to the total property.

Income Approach

- Land Cap Rate (R_L) – used when capitalizing land income
- Developed by adding together the Discount Rate and the Effective Tax Rate
  - If the Discount rate is 8% and the Effective Tax Rate is 1.2%, the Land Cap Rate would be 9.2% (8% + 1.2%)

Income Approach

- Improvement (Bldg.) Cap Rate (R_I) – used when capitalizing improvement (building) income.

- It is developed by adding together the Discount Rate, the Effective Tax Rate, and the Recapture Rate.

Income Approach

- Example:
  - If the Discount Rate is 8%, the Effective Tax Rate is 1.2% and the Recapture Rate is 2%, the Improvement Cap Rate is 11.2%.

(8% + 1.2% + 2% = 11.2%)

Income Approach

- Now, turn to Problem 8, Land and Building Capitalization Rates. Read the information carefully and using the information we just discussed, determine an overall capitalization rate.

Class Problem # 8
Land and Building Capitalization Rates

You are given the following information:

Discount Rate	9.0%
Mortgage Rate	6.5%
Recapture Rate	2.5%
Effective Tax Rate	1.5%
Nominal Tax Rate	$3.00 per $100 of Assessed Value

Calculate a Land Capitalization Rate. _____

Calculate an improvement/building capitalization rate. _____

Class Problem # 8 Answer

Land and Building Capitalization Rates

Calculate a Land Capitalization Rate.
Calculate an improvement/building capitalization rate.

Calculate a Land Capitalization Rate.

Discount Rate	9.0%
Plus Effective Tax Rate	1.5%
Land Cap Rate	**10.5%**

Calculate an improvement/building capitalization rate.

Discount Rate	9.0%
Plus Effective Tax Rate	1.5%
Plus Recapture Rate	2.5%
Building Cap Rate	**13.0%**

Income Approach

- Overall Capitalization Rate (R_O) or (OAR) – used when we are capitalizing the income to the total property.
- Developed by weighting the land cap rate and the improvement cap rate by the land-to-building ratio.

Income Approach

- Example:
  - Land-to-building ratio is 1:4 (20% land, 80% building)
  - If the land cap rate is 8% and the building cap rate is 12%, the OAR is calculated as follows:
    - Land Cap Rate = 8% x 20% = 1.6%
    - Bldg. Cap Rate – 12% X 80% - 9.6 %
    - OAR is 1.6% + 9.6% or 11.2%

Income Approach

- Now turn to Problem 9, Overall Capitalization Rate, Weighted Land and Bldg. Cap Rates. Using the information provided and the previous slide as an example, determine the overall capitalization rate.

Class Problem # 9
Overall Capitalization Rate
and
Weighted Land and Building Cap Rates

You are given the following information:

Discount Rate	8.0%
Recapture Rate	2.0%
Effective Tax Rate	2.0%
Land to Building Ratio	1:3

Calculate an overall capitalization rate (OAR).

Class Problem # 9 Answer
Overall Capitalization Rate
and
Weighted Land and Building Cap Rates

You are given the following information:

Discount Rate	8.0%
Recapture Rate	2.0%
Effective Tax Rate	2.0%
Land to Building Ratio	1:3

Calculate an overall capitalization rate (OAR).

Step 1) Calculate a Land Cap Rate:

Discount Rate	8.0%
Plus Effective Tax Rate	2.0%
Equals Land Cap Rate	10.0%

Step 2) Calculate a building capitalization rate.

Discount Rate	8.0%
Plus Effective Tax Rate	2.0%
Plus Recapture Rate	2.0%
Equals Building Cap Rate	12.0%

Step 3) Weight the land and building cap rates by the land to building ratio.

Land	1 part	1/4	25.0%
Building	3 parts		75.0%
Total	4 parts		100.0%

Land Cap Rate	10.0%	X	25.0%	2.5%
Building Cap Rate	12.0%	X	75.0%	9.0%
Total Overall Capitalization Rate				11.5%

Income Approach

- A second method of developing an overall cap rate is to determine it directly from the market by analyzing comparable property using the IRV formula.
  - I ÷ V = R
  - NOI ÷ Sale Price = Overall Rate

Income Approach

- For example: Assume that our NOI is $45,100 and our Sale Price was $400,000. Our OAR would be 11.275% or 11.3%.

$45,100 ÷ $400,000 = 11.275% or 11.3%

Income Approach

- Now turn to Problem 10, Overall Capitalization Rate From the Market and determine an overall capitalization rate.

Class Problem # 10

Overall Capitalization Rate From the Market

You have obtained the following information on properties comparable to the Gateway Shopping Center:

Property	EGI	Total Exp. And RR	Sale Price
Riverton SC	$469,775	$150,330	$2,778,000
Eagle Ridge SC	$392,440	$129,500	$2,307,000
Chatham SC	$518,760	$166,000	$3,065,000
Hyde Park SC	$318,780	$98,820	$1,895,000

Calculate an Overall Capitalization Rate.

Class Problem # 10 Answer

Overall Capitalization Rate From the Market

Calculate an overall capitalization rate.

Property	EGI	Total Exp. And RR	NOI	Sale Price	OAR
Riverton SC	$469,775	$150,330	$319,445	$2,778,000	11.5%
Eagle Ridge SC	$392,440	$129,500	$262,940	$2,307,000	11.4%
Chatham SC	$518,760	$166,000	$352,760	$3,065,000	11.5%
Hyde Park SC	$318,780	$98,820	$219,960	$1,895,000	11.6%

The Overall Capitalization Rate is: 11.5%

Income Approach

- Once you have the appropriate capitalization rate, it is merely a matter of plugging it into the IRV formula and capitalizing the NOI for the property into an indication of the property's value using the income approach.

Income Approach

- Let's review the IRV formula, it is shown on slide 67:
  - I ÷ R = V
  - NOI ÷ Cap Rate = Market Value

  - If the NOI is $49,500 and the Cap Rate is 11%, the market value is $450,000.
    ($49,500 ÷11% = $450,000)

Income Approach

- Turn to Problem 11, Direct Capitalization, Overall Capitalization Rate.

- Using the answers from Problem 7 and 10, calculate the value of the Gateway Shopping Center.

Class Problem # 11

Direct Capitalization and Overall Cap Rate

Use the answers from Problems 7 and 10 and calculate the value of the Gateway Shopping Center using direct capitalization in the income approach to value.

Class Problem # 11 Answer

Direct Capitalization and Overall Cap Rate

Use the answers from Problems 7 and 10 and calculate the value of the Gateway Shopping Center using direct capitalization in the income approach to value.

Answer from Problem # 7:

The subject property's Net Operating Income (NOI) is: $ 300,628

Answer from Problem # 10:

The Overall Capitalization Rate (OAR) is: 11.5%

Apply the Direct Capitalization Method IRV Formula

V = I/R

Net Operating Income / Over All Rate = Market Value

$ 300,628 / 11.5% = $ 2,614,157

Income Approach

- Capitalization methods are different ways of mathematically combining income streams and capitalization rates to arrive at a conclusion of value by the income approach.
- They can be divided into two categories:
  - Direct Capitalization Methods
  - Yield Capitalization Methods (we will not be discussing these)

Income Approach

- **Direct Capitalization Methods**
- Direct capitalization methods use an estimate of one year's income and directly converts it into an indicated value.
  - Uses the IRV or VIF formulas
  - The direct methods are: Overall Capitalization Rates and Gross Income or Gross Rent Multipliers

Income Approach

- We just discussed, and you just determined an overall cap rate, so we are going to spend the rest of the time talking about the Gross Income/Gross Rent Multipliers.

Income Approach

- **<u>Gross Income/Gross Rent Multipliers</u>**
  This is also a simple method of capitalization. It uses the VIF formula and converts one year's (or one month's) effective gross income (EGI) into value by multiplying it by a factor.
  The factor is called a <u>multiplier</u>, and can be either a Gross Income Multiplier (GIM) or a Gross Rent Multiplier (GRM).

Income Approach

- **I x F = V**
- **EGI x GIM = Market Value**

- **If our EGI = $60,000 and our GIM = 7, the indicated value of our property would be $420,000**

Income Approach

- **Gross Income Multipliers (GIM)** are developed for most commercial properties such as office buildings, shopping centers, warehouses, and large apartment complexes.
- **Gross Rent Multipliers (GRM)** are developed for residential properties such as single-family, duplexes, triplexes, etc.

Income Approach

- **Gross Income Multipliers (GIM)** are developed from comparable properties' **annual** effective gross income and are applied to the subject property's **annual** effective gross income.

Income Approach

- **Gross Rent Multipliers (GRM)** are developed from comparable properties' **monthly** effective gross income and are applied to the subject property's **monthly** effective gross income.

Income Approach

- **<u>Gross Income Multipliers (GIM) Formula</u>**:

  Sale Price ÷ Annual EGI = GIM

- Example:
  - Comp #1 $420,000 ÷ $70,000 = 6.0
  - Comp #2 $520,000 ÷ $88,100 = 5.9
  - Comp #3 $630,000 ÷ $103,300 = 6.1

Income Approach

- This tells us that investors are paying approximately six (6) times the annual effective gross rent for these properties.

Income Approach

- Gross Income Multiplier Application:

$$I \times F = V$$

Annual EGI x GIM = Market Value

Example:

Subject property's annual EGI is $90,000, and the GIM is 6.

The indicated market value would be $540,000 ($90,000 x 6 = $540,000)

Income Approach

- **<u>Gross Rent Multiplier (GRM) Formula</u>**:

  Sale Price ÷ Monthly EGI = GRM

- Example:
  - Comp #1 $48,000 ÷ $450 = 106.7
  - Comp #2 $50,500 ÷ $470 = 107.4
  - Comp #3 $53,000 ÷ $495 = 107.1

Income Approach

- This tells us investors are paying approximately one hundred seven (107) times the monthly effective gross rent for these properties.

Income Approach

- Gross Rent Multiplier (GRM) application:

$$I \times F = V$$

$$\text{Monthly EGI} \times \text{GRM} = \text{Market Value}$$

- Subject property's monthly EGI is $500 and the GRM is 107.
- The subject property's indicated market value is $53,500 ($500 x 107)

Income Approach

- Now turn to Problem 12, Direct Capitalization, Gross Income Multiplier.

- Using the information in Problems 3 and 10, calculate a gross income multiplier and determine the value of the subject property.

Class Problem # 12

Direct Capitalization Vs. Gross Income Multiplier

Using the EGI arrived at in Problem # 3 and the chart below from problem # 10, calculate a Gross Income Multiplier (GIM) and determine the value of the subject property using Direct Capitalization in the Income Approach.

Then compare this answer to the one you arrived at in Problem # 11:

Property	EGI	Total Exp. And RR	Sale Price
Riverton SC	$469,775	$150,330	$2,778,000
Eagle Ridge SC	$392,440	$129,500	$2,307,000
Chatham SC	$518,760	$166,000	$3,065,000
Hyde Park SC	$318,780	$98,820	$1,895,000

Class Problem # 12 Answer

Direct Capitalization Vs. Gross Income Multiplier

Using the EGI arrived at in Problem # 3 and the chart below from problem # 10, calculate a Gross Income Multiplier (GIM) and determine of the value of the subject property using Direct Capitalization in the Income Approach.

Information from Problem # 10:

Property	EGI	Total Exp. And RR	Sale Price
Riverton SC	$469,775	$150,330	$2,778,000
Eagle Ridge SC	$392,440	$129,500	$2,307,000
Chatham SC	$518,760	$166,000	$3,065,000
Hyde Park SC	$318,780	$98,820	$1,895,000

Calculation of Gross Income Multiplier (GIM): GIM = Sale Price/Annual EGI

Property	Sale Price	EGI	GIM
Riverton SC	$2,778,000	$469,775	5.9
Eagle Ridge SC	$2,307,000	$392,440	5.9
Chatham SC	$3,065,000	$518,760	5.9
Hyde Park SC	$1,895,000	$318,780	5.9

The Gross Income Multiplier in this problem would be **5.9**

Now apply the VIF formula:

EGI Times GIM = Market Value

$442,100 times 5.9 = $2,608,390

Now compare this answer to the one arrived at in Problem # 11: $2,614,157

Practice Problem # 1

PGI-EGI-NOI

You have obtained the following information:
A building has total of 40,000 Square Feet. There is 8,000 Square Feet of common area. Market rent is currently $20.00 per square foot of net leasable area. The Vacancy and Collection Loss Rate is 6%. The Operating Expense and the Reserves for Replacements is at 18%. The Overall Capitalization Rate is 10%.

You are to develop the Potential Gross Income (PGI), the Effective Gross Income (EGI), and the Net Operating Income (NOI). Once you have done that, calculate an estimate of value for this property.

Practice Problem # 1
PGI-EGI-NOI Answer

You are to develop the Potential Gross Income (PGI), the Effective Gross Income (EGI), and the Net Operating Income (NOI). Once you have done that, calculate an estimate of value for this property.

Potential Gross Income	$640,000
Vacancy and Collection Loss	-$38,400
Misc Income	0
Effective Gross Income	$601,600
Operating Expenses & RR	-$108,288
Net Operating Income	$493,312

COMPUTATION OF PGI, EGI, AND NOI FOR ABOVE PROBLEM

PGI	32,000	$20	$640,000
V and C	$640,000	6%	-$38,400
Misc Income	$0		0
Effective Gross Income			$601,600
Operating Expenses & RR	$601,600	18%	-$108,288
Net Operating Income			$493,312

THE INCOME FROM ABOVE IS	$493,312
Overall Capitalization Rate	10%
Estimate of value using the IRV formula	$4,933,120

Practice Problem # 2

Development of NOI and Overall Cap Rate

Potential Gross Income	$150,000
Vacancy and Collection Loss	10%
Operating Expense	$25,000
Christmas Gift	$2,500
Property Value	$800,000
Loan to value ratio	0.4

The above is given to you. Develop the NOI and the Overall Capitalization Rate.

Practice Problem # 2 Answer

Development of NOI and Overall Cap Rate

Potential Gross Income	$150,000
Vacancy and Collection Loss	10%
Operating Expense	$25,000
Christmas Gift	$2,500
Property Value	$800,000
Loan to value ratio	0.4

The above is given to you. Develop the NOI and the Overall Capitalization Rate.

Net Operating Income	$110,000
Overall Cap Rate	13.8%

DEVELOPMENT OF NET OPERATING INCOME

PGI	$150,000
V & C Loss	-$15,000
Misc Inc	$0
Effective Gross Income	$135,000
Operating Expense	-$25,000
Net Operating Income	$110,000

Practice Problem # 3

Expense Ratio Problem

You have obtained the following information. Develop an Expense Ratio for the subject property based on this market information. What expense ratio will you use for your subject property?

Office Bldg.	EGI	Expenses	Reserves	Total Exp	Exp Ratio
Uptown	$468,230	$134,220	$15,000		
River Edge	$393,450	$118,200	$12,000		
East Lake	$522,030	$147,500	$18,000		
Forest Glen	$319,500	$88,120	$10,800		

Practice Problem # 3 Answer

Expense Ratio Problem

What expense ratio will you use for your subject property?

Office Bldg.	EGI	Expenses	Reserves	Total Exp	Exp Ratio
Uptown	$468,230	$134,220	$15,000	$149,220	31.9%
River Edge	$393,450	$118,200	$12,000	$130,200	33.1%
East Lake	$522,030	$147,500	$18,000	$165,500	31.7%
Forest Glen	$319,500	$88,120	$10,800	$98,920	31.0%

Total Expense Ratio 31.8%

Practice Problem # 4 (A)

Gross Rent and Gross Income Multipliers

Gross Rent Multiplier Problem

The subject property is a single family dwelling which is rented for $475 per month. The market rent is also $475 per month. Develop a GRM from the following data and use it to calculate a possible indication of value.

Sales

	1	2	3	4	5	6
Sale Price	$60,000	$72,000	$65,000	$62,000	$68,000	$70,000
Monthly Rent (EGI)	$425	$520	$460	$450	$490	$500
GRM						

Practice Problem # 4 (A) Answer

Gross Rent and Gross Income Multipliers

Gross Rent Multiplier Problem

The subject property is a single family dwelling which is rented for $475 per month. The market rent is also $475 per month. Develop a GRM from the following data and use it to calculate a possible indication of value.

Sales

	1	2	3	4	5	6
Sale Price	$60,000	$72,000	$65,000	$62,000	$68,000	$70,000
Monthly Rent (EGI)	$425	$520	$460	$450	$490	$500
GRM	141	138	141	138	139	140

GRM = Sales Price divided by the Monthly Rent (EGI)

Median is 140

Possible indication of value: Market rent of $475 times 140 = $66,500

Practice Problem # 4 (B)
Gross Income Multiplier Problem

The subject property produces Gross Annual Effective Gross Income of $72,000. Analysis of rents and, sales of comparable properties rendered the following. Based upon this information calculate a Gross Income Multiplier (GIM) and then calculate an indication of value for the subject property.

Sale	Sale Price	EGI	Gross Income Multiplier	Range
1	$675,000	$75,000		
2	$600,000	$68,000		
3	$720,000	$85,700		
4	$750,000	$87,500		
5	$650,000	$73,000		

Estimated value of subject property: _____

Value using Median	
Value using Low range	
Value using High range	

Practice Problem # 4 (B) Answer

Gross Income Multiplier Problem

The subject property produces Gross Annual Effective Gross Income of $72,000. Analysis of rents and, sales of comparable properties rendered the following. Based upon this information calculate a Gross Income Multiplier (GIM) and then calculate an indication of value for the subject property.

Sale	Sale Price	EGI	Gross Income Multiplier	Range
1	$675,000	$75,000	9.0	8.4
2	$600,000	$68,000	8.8	8.6
3	$720,000	$85,700	8.4	8.8
4	$750,000	$87,500	8.6	8.9
5	$650,000	$73,000	8.9	9.0

GIM = Sale Price divided by the median EGI

Possible indicated range of value:

Subject property EGI of $72,000 times low range =	$604,800
Subject property EGI of $72,000 times high range =	$648,000
Subject property EGI of $72,000 times median range 8.8 =	$633,600

Income Approach

This concludes the Income Approach tutorial and is a reminder that should you have questions you can email these questions to the DLGF.

Please send emails to Level2@dlgf.in.gov.