

**Income Approach**  
**Practice Problem # 1**  
Developing NOI and Cap Rates

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

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Overall Cap Rate

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**Income Approach**  
**Practice Problem # 1 Answer**  
Developing NOI and Cap Rates

PGI	\$150,000
V & C Loss ( $\$150,000 \times 10\%$ )	-\$15,000
Misc Inc	\$0
Effective Gross Income	\$135,000
Operating Expense (Given)	-\$25,000
Net operating Income	\$110,000

Net operating Income

**\$110,000**

Overall Cap Rate (Income/Value=Rate)

**13.8%**



**Income Approach  
Practice Problem # 2  
Developing PGI, EGI, and NOI and Value of Subject**

40000 square feet  
Of this, 8000 square feet is common area  
Market Rent \$20/square foot of net rentable area  
Vacancy and Collection loss 6%  
Operating Exp and Reserve for Replacement 18%  
CAPITALIZATION RATE IS 10%

THE ABOVE IS GIVEN PER PROBLEM--DEVELOP PGI, EGI, & NOI AND THE VALUE OF THIS SUBJECT PROPERTY

Potential Gross Income	_____
Vacancy and Collection Loss	_____
Misc Income	_____
Effective Gross Income	_____
Operating Expenses & Reserves for Replacements	_____
Net Operating Income	_____

WHAT IS THE VALUE OF THIS PROPERTY \_\_\_\_\_

**Income Approach**  
**Practice Problem # 2 Answer**  
**Developing PGI, EGI, and NOI and Value of Subject**

POTENTIAL GROSS INCOME	32,000(NLA)	x	\$20(Market Rent)	=	\$640,000PGI
VACANCY & COLLECTION LOSS	\$640,000(PGI)	x	6%(V&C Loss)	=	-\$38,400
MISC. INCOME	\$0				<u>\$0</u>
EFFECTIVE GROSS INCOME					<u>\$601,600EGI</u>
OPERATING EXP AND RESERVE FOR REPLACEMENT	\$601,600(EGI)	x	18%(Exp. & R.R.)	=	<u>-\$108,288</u>
NET OPERATING INCOME					<u><u>\$493,312NOI</u></u>

IF THE CAPITALIZATION RATE IS 10%

WHAT IS THE VALUE OF THIS PROPERTY?

THE NET OPERATING INCOME FROM ABOVE IS  
 CAPITALIZATION RATE IS  
 ESTIMATED VALUE OF PROPERTY

<u>\$493,310</u>
10%
<u><u>\$4,933,100</u></u>

$I \div R = V$



**Income Approach  
Practice Problem # 3  
Developing an Expense Ratio**

Using the below information, calculate an expense ratio for each of the four properties.

SC	EGI	EXPENSES	RESERVES		
Riverton	\$469,775	\$135,330	\$15,000		
Eagle Ridge	\$392,440	\$117,500	\$12,000		
Chatham	\$518,760	\$148,000	\$18,000		
Hyde Park	\$318,780	\$88,020	\$10,800		

What is the Median expense ratio?



**Income Approach**  
**Practice Problem # 3 Answer**  
**Developing an Expense Ratio**

Given the above information develop an expense ratio to use on our subject property.

SC	EGI	EXPENSES	RESERVES	Total Expense	Exp Ratio
Rieverton	\$469,775	\$135,330	\$15,000	\$150,330	32.0%
Eagle Ridge	\$392,440	\$117,500	\$12,000	\$129,500	33.0%
Chatham	\$518,760	\$148,000	\$18,000	\$166,000	32.0%
Hyde Park	\$318,780	\$88,020	\$10,800	\$98,820	31.0%

The Median Expense Ratio is 32.0%



Income Approach  
Practice Problem # 4 (A)  
Gross Rent Multiplier Problem VIF Formula

SALES

	1	2	3	4	5
Sale Price	\$45,000	\$56,000	\$48,000	\$53,500	\$58,000
Monthly Rent	\$425	\$520	\$450	\$490	\$525
GRM					

MONTHLY EGI OF SUBJECT PROPERTY

\$475

MEDIAN

USING THE MEDIAN GRM PROVIDE AN INDICATION OF VALUE TO THE NEAREST \$100.



**Income Approach  
Practice Problem # 4 (A) Answer  
Gross Rent Multiplier Problem VIF Formula**

	SALES					GRM Rank
	1	2	3	4	5	
Sale Price	\$45,000	\$56,000	\$48,000	\$53,500	\$58,000	105.9
Monthly Rent	\$425	\$520	\$450	\$490	\$525	106.7
GRM	105.9	107.7	106.7	109.2	110.5	107.7
						109.2
						110.5

MONTHLY EGI OF SUBJECT PROPERTY \$475

MEDIAN 107.7

USING THE MEDIAN GRM PROVIDE AN INDICATION OF VALUE TO THE NEAREST \$100.

Indication of value \$475 Times 107.7 \$51,200

(ROUND TO THE NEAREST \$100)





**Income Approach  
Practice Problem # 4 (B)  
Gross Income Multiplier Problem**

Sale	Sale Price	Effective Gross Income	Gross Income Multiplier
A	\$650,000	\$75,000	
B	\$590,000	\$68,000	
C	\$695,000	\$85,700	
D	\$750,000	\$87,500	
E	\$620,000	\$73,000	

Ranges from \_\_\_\_\_

to \_\_\_\_\_

GIVEN YEARLY EGI	RANGE	VALUES
\$72,000		
\$72,000		

Median

PROVIDE THE HIGH AND LOW RANGE VALUES BASED ON THE GIM.



**Income Approach  
Practice Problem # 4 (B) Answer  
Gross Income Multiplier Problem**

Sale	Sale Price	Effective Gross Income	Gross Income Multiplier
A	\$650,000	\$75,000	8.7
B	\$590,000	\$68,000	8.7
C	\$695,000	\$85,700	8.1
D	\$750,000	\$87,500	8.6
E	\$620,000	\$73,000	8.5

Ranges from 8.1 to 8.7

\$72,000	LOW	8.1	\$583,200
\$72,000	HIGH	8.7	\$626,400
Median		8.6	\$619,200

ROUNDED TO NEAREST \$100





# Level I

- This concludes the income approach problems and answers packet and is a reminder that should you have questions you can email these questions to the Department.
- Please send emails to [Level1@dlgf.in.gov](mailto:Level1@dlgf.in.gov)