

SESSION WORKBOOK

Ruff Math Made Easy

*See the Impact from
Decisions to Dollars*



Ruff Math Made Easy

*See the Impact From
Decisions to Dollars*

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About This Session

Ruff Math Made Easy: *See the Impact From Decisions to Dollars*

Property management is more than operations; it's an investment strategy. When we approach our work with this mindset, we not only elevate residents' experiences but also deliver stronger results for owners, investors, and our teams. This session equips attendees with a clear understanding of key performance metrics and financial calculations that drive success.

Participants will learn to interpret and apply common terms, reports, and formulas to communicate effectively, align with organizational goals, and make data-driven decisions. Attendees will gain practical insight into occupancy metrics, the structure and purpose of operating and cash flow statements, and how day-to-day decisions impact both NOI and overall property value.

Meet The Presenter

Victoria Cowart, CPM, NAAEI Faculty, is the Vice President of Education at PetScreening, bringing over 35 years of property management expertise. A seasoned leader with a diverse portfolio background, Victoria thrives on delivering impactful educational sessions on topics ranging from fair housing and industry math to property management licensing, pet policy management and mental health. She holds a bachelor's degree, and the designations of NAAEI Faculty and CPM.

An active industry advocate, Victoria has led local and state associations, served as an NAA RVP, chaired four NAA committees, and is a proud inductee of the South Carolina Hall of Fame. Cowart has a degree in the management of human resources, holds her CPM from IREM, has been certified as a Fair Housing Specialist by the National Center for Housing Management, and has been certified as an Adult Mental Health First Aid Instructor by the National Council for Mental Wellbeing.



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Let's connect!

Scan the QR code or click [HERE](#).

Presentation Slides

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 **Victoria Cowart CPM, NAAEI Faculty**
Vice President of Education
PetScreening

 **Connect**
Connect with Victoria!

Our Goals Today

Understand performance metrics and calculations to better:

- ✓ Communicate effectively - using common terms
- ✓ Understand financial expectations
- ✓ Realize the true dollar value of each team member's efforts
- ✓ Learn how to sell your budget versus present it

Presentation Slides



Occupancy Terms & Calculations



Physical Occupancy (PO): The percentage of apartments at Sea View Apartments that are occupied.

**If you have a model, please ask if that counts as occupied for future calculations.*

- Example: 250 Apartments with 243 Occupied - Calculating Occupancy looks like this...
243 Occupied Apts / 250 Total Apts x 100 = 97.2% Occupancy

Vacancy: Percentage of the apartments at Sea View Apartments that are vacant.

**Same note: Is the model, if you have one, considered vacant for future calculations?*

- Example: 250 Apartments with 7 Vacant - Calculating Vacancy looks like this...
7 Vacant Apts / 250 Total Apts x 100 = 2.8% Vacancy

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Presentation Slides

Occupancy Terms & Calculations

Preparing for Economic Occupancy



Gross Potential Rent (GPR): The total income when you consider all apartments at their full, market rate. This calculation would include all units in the community.

- Example: 100 Apartments renting for \$1500 each:

$$100 \times \$1,500 = \$150,000 \text{ GPR}$$

Effective Gross Income (EGI): The result of GPR minus anything that reduces the rent such as vacancy or losses to old leases.

- Example: 100 Apartment community \$1500 rent each and 3 are vacant (\$4,500), and another 3 are being rented below market value by \$200 each month (\$600).

$$\$150,000 \text{ (GPR)} - \$4,500 \text{ (Vac)} - \$600 \text{ (LTOL)} = \$144,900 \text{ EGI}$$

- And then of course we may have concessions to consider (\$900 in this example).

$$\$150,000 \text{ (GPR)} - \$4,500 \text{ (Vac)} - \$600 \text{ (LTOL)} - \$900 \text{ (Concessions)} = \$144,000 \text{ EGI}$$

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Occupancy Terms & Calculations



Economic Occupancy (EO):

- **Practice Question**
- Different calculation related to occupancy--in financial terms
- Combination of physical occupancy and attention to details

Example:

- Physical Occupancy: 4 Units with 1 Vacant = $3 / 4 \times 100 = 75\% \text{ PO}$
- Economic Occupancy (EO): $\text{EGI} / \text{GPR} \times 100 = \text{EO}$

EGI: GPR - Vacancy - LTOL

- 4 x \$1,000 \$4,000 (GPR)
- 1 Vacancy - \$1,000
- 2 Paying \$900 - \$200 (LTOL)
- **EGI..... \$2,800**

$$\begin{aligned} & \$2800 \text{ (EGI)} / \$4000 \text{ (GPR)} \\ & \times 100 = 70\% \\ & \text{Economic Occupancy} \end{aligned}$$

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Occupancy Terms & Calculations



Physical Occupancy (PO) & Economic Occupancy (EO):

- **Bonus Question:**

- 10 plex (10 Units) with Ideal Rents of \$1200 each p/month (GPR?)
- Two are Vacant & Two are paying \$250 under market
- There was \$750 in concessions

Tip: For EO below, 1st calculate GPR and EGI

- Physical Occupancy (PO)? **(Occupied Units / Total Units x 100 = PO)**
- Economic Occupancy (EO)? **(Then: EGI / GPR x 100 = EO)**
 - **A:** 80% (PO) 87.92% (EO)
 - **B:** 80% (PO) 69.58% (EO)
 - **C:** 80% (PO) 75.83% (EO)
 - **D:** 80% (PO) 77.92% (EO)

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Occupancy Terms & Calculations



Retention Calculator: Monitoring resident retention is vital, since turnover generates costly vacancy loss, marketing spend, and turn-related expenses. Track quarterly and compare to other communities in your company/region. How can you improve retention?

- Calculation: Number of leases renewed / Number of expiring leases x 100 = %
- 50 leases renewed Q1 / 80 leases expired Q1 x 100 = 62.5%

Duration/Value of Stay Calculator: Monitoring resident retention and the duration and value of each lease term is another important performance indicator. Track monthly and compare to other communities in your company/region quarterly. How can you lengthen duration and increase the per renter value? **Pawsitive pet policies will increase duration by as much as 21%!*

- Calculation (Length/Value):
 - Determine # of months of tenancy x current average rent = \$
 - 27.5 months (Duration) x \$1800 = \$49,500 (Value)
 - 33 months (Duration) x \$1800 = \$59,400 (Value)

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Presentation Slides



Financial Terms, Statements & Calculations

GPR, LI, EGI, OI, GI... OH MY!





Financial Terms, Statements & Calculations



INCOME

- **Gross potential rent (GPR):** Ideal revenue at Sea View Apartments with perfect conditions and everything is possible – all units at top market rents.
- **Lost Income (LI):** Vacancies, losses to old leases, concessions, etc.
Building the equation, we are now at $GPR - LI$
- **Effective Gross Income (EGI):** The difference between the GPR and the LI
Building the equation, we are now at $GPR - LI = EGI$

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Financial Terms, Statements & Calculations



INCOME

- **Other Income (OI):** Income other than rent. Here are a few examples from "ButterflyMX"
 - Application fees, Late fees, Laundry, Parking rent/fees, Pet rent/fees
 - Furniture rental, Early lease termination fees, Property damage fees
 - Amenity access fees, etc...

Building the equation, we are now at $GPR - LI = EGI + OI$

- **Gross Operating Income (GOI):** This is the money that you have to work with for Sea View Apartments, and it is the result of the terms above shown as:

Building the equation, we are now at $GPR - LI = EGI + OI = GOI$

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Example

INCOME			
Gross Potential Rent (GPR)	268,922.00	244,584.00	24,338.00
	268,922.00	244,584.00	24,338.00
LOST INCOME (LI)			
Less: Arrears Written Off	-2,302.45	-2,568.00	265.55
Less: Vacancy Loss	-13,998.26	-10,360.00	-3,638.26
Less: Model Units	-1,010.00	-1,010.00	0.00
Less: Employee Units	0.00	-886.00	886.00
Less: Courtesy Officer Units	0.00	-256.00	256.00
Less: Concessions - Upfront	-300.00	-160.00	-140.00
LOST INCOME (LI) TOTAL	-17,610.71	-15,240.00	-2,370.71
EFFECTIVE GROSS INCOME (EGI)	251,311.29	229,344.00	21,967.29
OTHER INCOME (OI)			
Application Fees	1,725.00	1,600.00	125.00
Pet Rent and Pet Fees	1,183.87	1,125.00	38.87
Cleaning Fees / Damage	2,130.46	1,550.00	580.46
Late Fees	2,375.00	3,288.00	-913.00
Force Placed Insurance	1,125.00	629.00	496.00
OTHER INCOME (OI) TOTAL	8,519.33	8,192.00	327.33
GROSS OPERATING INCOME (GOI)	259,830.62	237,536.00	22,294.62

Gross Potential Rent (GPR)

**- Lost Income (LI)
= Effective Gross
Income (EGI)**

**+ Other Income (OI)
= Gross Operating
Income (GOI)**



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Financial Terms, Statements & Calculations



EXPENSES

- Operating Expenses (OpEx):** These are the day in and day out expenses and often do not change with occupancy. These are the costs as soon as you open the doors such as: salaries, services you contract for, and then the “unavoidable”-- taxes, insurance and utilities all to sustain Sea View Apartments.

Building the equation, we are now at $GOI - OpEx$

- Net Operating Income (NOI):** This is the difference between Gross Operating Income and the Operating Expenses. Shown as:

Building the equation, we are now at $GOI - OpEx = NOI$

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Example

GROSS OPERATING INCOME (GOI)	259,830.62	237,536.00	22,294.62
EXPENSES			
TOTAL GENERAL & ADMINISTRATIVE	19,970.68	19,672.00	-298.68
TOTAL ADVERTISING & PROMOTIONAL	3,162.50	4,163.00	1,000.50
TOTAL REPAIRS & MAINTENANCE	3,481.00	3,900.00	419.00
TOTAL REDECORATING / MAKE-READY	7,858.87	9,515.00	1,656.13
TOTAL UTILITIES	35,773.78	37,267.00	1,493.22
OPERATING EXPENSES TOTAL (OpEx)	70,246.83	74,517.00	4,270.17
NET OPERATING INCOME (NOI)	189,583.79	163,019.00	26,564.79

Gross Operating Income (GOI)



- Operating Expenses (OpEx)

= Net Operating Income (NOI)

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Presentation Slides

Financial Terms, Statements & Calculations



BUILDING TO A FULL CASH FLOW REPORT...

- **Debt Service (DS):** This is the mortgage for Sea View Apartments.
- **Capital Expense (CapEx):** These are the higher end expenses for the community or the units. These are capitalized meaning the cost is spread out over time (useful life of the item). These are unit items (HVAC systems, water heaters, etc.), unit features (flooring, appliances, etc.), community additions (bark parks, etc.).
- **Cash Flow:** What is left over for a period at Sea View Apartments, or not, after you consider income, all operating expenses, the debt service and the capital expenses. How much money is this asset making at the end of the day? This, some will say, is the most important report for the owner. Their interests do not stop at NOI!

Building the equation, we are now at $\text{NOI} - \text{Debt Service} - \text{CapEx} = \text{Cash Flow}$

Ruff Math Made Easy : See the Impact From Decisions to Dollars

Example

NET OPERATING INCOME (NOI)	189,583.79	163,019.00	26,564.79	Net Operating Income (NOI)
TOTAL DEBT SERVICE	31,000.00	31,000.00	0.00	- Debt Service
CAPITAL EXPENSES (CapEx) TOTAL	4,000.00	14,130.00	10,130.00	- Capital Expenses (CapEx)
CASH FLOW	154,583.79	117,889.00	36,694.79	= Cash Flow

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Presentation Slides

Investment Terms & Calculations

NOI, Property Values & CAP Rates





Investment Terms & Calculations



Do Owners/Investors buy sticks & bricks or an income stream?

Cap Rate: Demonstrates what investors pay for each dollar of annual NOI.

What's the WIFM for me? Learning the dollar value of YOUR work – YOUR impact!

**Three numbers involved:
NOI, Property Value, & the CAP rate.**
When you have any two, you can solve for the third.

Let's do that together!

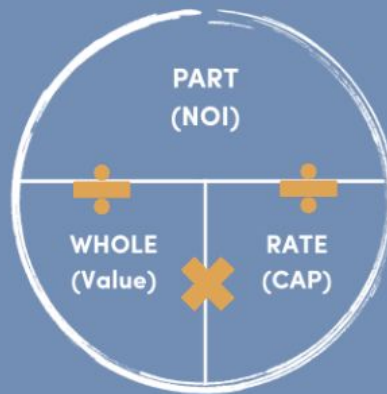
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Investment Terms & Calculations Remembering Formulas?

$CAP \times Value = NOI$
 $NOI / Value = CAP$
 $NOI / CAP = Value$

Remember formulas or
this simple image →

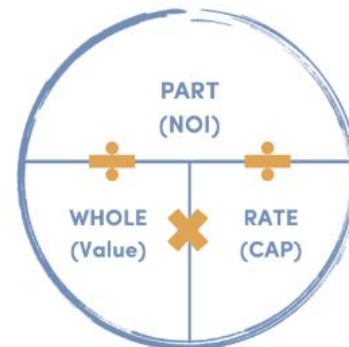


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Example



- A property with an annual NOI of \$250,000 per year sold for \$5,000,000. What is the CAP Rate?
 - $\$250,000 / \$5,000,000 = .05 \times 100$
(to express as a %) **5% CAP Rate**
- A property in an area with a 4.5% CAP rate recently sold for \$23 million. What is the NOI for this community?
 - $\$23,000,000 \times .045 = \$1,035,000$ NOI
- A property with an NOI of \$325,000 in a 4% CAP rate area. What is the value for the property?
 - $\$325,000 / .04 = \$8,125,000$



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Investment Terms & Calculations



Here's the mathematical bottom line in that...

A dollar at a 5% CAP is worth	\$20.00!
A dollar at a 4.5% CAP is worth	\$22.22!
A dollar at a 4% CAP is worth	\$25.00!

Rule of thumb: Think of the CAP rate like a tax rate—the lower it is, the better.
A low CAP rate means each dollar of NOI is worth more!

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Investment Terms & Calculations Results



You can increase income & value...

- Application fees 5 per month at \$75 & a 5% CAP rate, does what?
- Parking fees 100 per month at \$25 @ a 4.5% CAP rate, does what?
- Exterminating fees 215 per month at \$3 @ a 4% CAP rate, does what?

You can decrease income & value...

- Hiring an HVAC Co. 3x per month at \$250 at a 5% CAP rate, does what?
- Paying to touch up turns 4x per month at \$75 at a 4.5% CAP rate, does what?
- Losing 4 unhappy renters a year at \$1800 at a 4% CAP rate, does what?

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Presentation Slides

Investment Terms & Calculations Results



You can increase income & value...

- Rent increase of \$50 per month for 8 units @ a 5% CAP does what?
 - $\$50 \times 8 \times 12 \text{ months} = \$4,800 / .05 = \$96,000$ INCREASE in property value

You can decrease income & value...

- Losing 4 unhappy renters each year (for even 6 months) at \$1800 at a 4% CAP rate, does what?
 - $4 \times \$1800 \times 6 \text{ months} = \$43,200 / .04 = \$1.1\text{M}$ DECREASE in property value!

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Investment Terms & Calculations Results



Bonus Questions:

You can increase income & value...

- Using **PetScreening** to properly assess Assistance Animal Requests & document pets creating 12 new paying pets a year @\$600 annual value for each pet & a 5% CAP does what?
 - Increases annual NOI by how much? **\$7,200**
 - Increase property value by how much? **\$144,000**

You can decrease income & value...

- Staffing and skill set challenges are causing you to hire an HVAC company versus doing all repairs in-house 3 times per month at \$250 @ 4% CAP, does what?
 - Decreases annual NOI by how much? **\$9,000**
 - Decreases property value by how much? **\$225,000**

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Presentation Slides

Investment Terms & Calculations | ROI



Return on Investment (ROI)... How do you determine what to charge for improvements to the unit or community? How do you sell your budget ideas? Begin with the end in mind. What ROI is acceptable to your owners/investors? What would excite you?

- **Selling a modest kitchen renovation**

Costs are what?

- Lighting \$ 450
- Backsplash \$ 350
- New Counters \$2500

Total \$3,300

Formula:

Annual premium / project cost x 100 = ROI

Example 1

- \$125 p/month rent premium = \$1500 p/year
- \$1,500 / \$3,300 (total cost) = **45% ROI**
- That's AMAZING!

Example 2

- \$75 p/month rent premium = \$900 p/year
- \$900 / \$3,300 (total cost) = **27% ROI**
- Pretty Great!

Ruff Math Made Easy : See the Impact From Decisions to Dollars

Investment Terms & Calculations | ROI



Return on Investment (ROI)... Sell your ideas and become a true asset manager!

Bonus Question:

- **Selling a modest lighting upgrade**

Costs are what?

- Lighting (Dining/Kit) \$ 450
- Bathrooms \$ 300
- Bedrooms \$ 350

Total \$1,100

Formula:

Annual premium / project cost x 100 = ROI

- **What is the ROI if you raise rents \$35 per month on each apartment? (Round up)**

- a. 3.5%
- b. 47%
- c. 38%
- d. None of the above

The Answer is C:

38% ROI

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Presentation Slides

Investment Terms & Calculations | ROI



Return on Investment (ROI)... How do you determine what to charge for improvements to the unit or community? Begin with the end in mind. What ROI is acceptable to your owners/investors? What is acceptable to you?

- **Selling a modest lighting upgrade**

Costs are what?

- Lighting (Dining/Kit) \$ 450
- Backsplash \$ 300
- Bedrooms \$ 350

Total \$1,100

Formula:

$$\text{Annual premium} / \text{project cost} \times 100 = \text{ROI}$$

Example 1

- \$35 p/month rent premium = \$420 p/year
- \$420 / \$1,100 (total cost) = **38% ROI**
- That's AMAZING!

Example 2

- \$20 p/mo = \$240 p/year
- \$240/\$1,100 = **22% ROI**
- Pretty Great!

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Investment Terms & Calculations | PBP



Payback Period (PBP)... How long will it take, with the annual premium coming in, for the owners/investors to get their money paid back? Is the length of the Payback Period in keeping with their goals?

- **Selling that Kitchen Renovation**

- Costs are what?

- Lighting (Dining/Kit) \$ 450
- Backsplash \$ 350
- New Counters \$2,500

Total \$3,300

Formula:

$$\text{Project Cost} / \text{Monthly Rent Premium} = \# \text{ of months for Payback (PBP)}$$

Example 1

- \$125 p/month rent premium
- \$3,300 / \$125 (p/mo) = **26-month PBP**

Example 2

- \$75 p/mo rent premium
- \$3,300 / \$75 (p/mo) = **44-month PBP**

Ruff Math Made Easy : See the Impact From Decisions to Dollars

Helpful Formulas

Physical Occupancy

Occupied Apts / Total Apts X 100 = Physical Occupancy %

E.g., 243 Occupied Apts / 250 Total Apts x 100 = 97.2% Physical Occupancy

Economic Occupancy

EGI / GPR X 100 = Economic Occupancy %

E.g., \$2800 (EGI) / \$4000 (GPR) X 100 = 70% Economic Occupancy

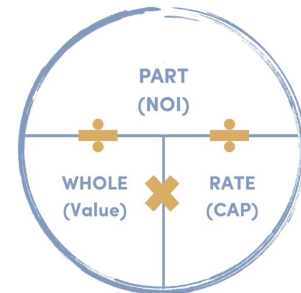
Operating Statement Calculations

GPR - LI = EGI + OI = GOI - OpEx = NOI

Cash Flow Statement Calculations

GPR - LI = EGI + OI = GOI - OpEx = NOI - Debt Service - CapEx = Cash Flow

CAP Rate, Value & NOI = numbers & calculations that reveal the value of each dollar of NOI – and YOUR financial impact on the asset(s) you manage. The image on the slide titled “Investment Terms & Calculations” shows how to solve for the 3rd number if you have 2 of the 3 numbers.



Return on Investment (ROI)

Annual Premium / Project Cost x 100 = ROI of the Project Cost

Payback Period (PBP)

Project Cost / Monthly Rent Premium = # of Months for Payback (PBP)

Operating & Cash Flow Terms

- **Gross Potential Rent (GPR):** Total potential rent for all Apts at full market rent.
- **Effective Gross Income (EGI):** - The result of subtracting lost (rent) income (LI) from GPR.
- **LI:** Lost Income
- **OI:** Other Income
- **GOI:** Gross Operating Income
- **OpEx:** Operating Expenses
- **NOI:** Net Operating Income
- **CapEx:** Capital Expense

Contact Us

For education session inquiries & support

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website: info.petscreening.com/petscreening-ed

For inquiries about PetScreening services

email: info@petscreening.com

website: petscreening.com/sales-demo

Additional resources



[Cash Vs Accrual Accounting](#)

basics by Leila Gharani (w/1.88M subscribers)

[The Most Important Formula in Multifamily Investing](#)

[Adding Value in the Age of Amenities Wars](#)

[Property Management Budget Guide](#)

[Capitalization Rate \(Investopedia\)](#)

[Best Practices: Asset Repositioning](#)

Tax-credit focused