

# Commonly Used Real Estate Math Formulas

## 1) Loan-to-value ratio

The loan-to-value ratio (LTV) is a measure used to compare the amount of your client's mortgage to the value of the home they wish to purchase. Mortgage lenders will often use the LTV to determine their risk in extending credit to your client as a borrower. Lenders favor a loan assessment with a low LTV because they see it as a lower risk.

As a real estate agent, you will commonly use this equation to help your clients.

### Loan to Value Ratio Formula:

$\text{Loan Amount} / \text{Assessed Value of the Property} = \text{Loan to Value Ratio}$

The LTV ratio is typically expressed as a percent. For example, if the home value is appraised at \$100,000 and your client's mortgage lender offers them a loan for \$80,000, then the LTV ratio for this house would be 80%.

## 2) Capitalization rate

The cap rate measures a real estate investment property's profitability. It helps investors figure out how much money they can make and keep cash flow positive while managing rental properties without taking on too much risk.

### Capitalization Rate Formula:

$\text{Net Operating Income} / \text{Purchase Price} = \text{Capitalization Rate}$

For example, a rental property costs \$800,000 and generates \$80,000 in rent. It costs \$20,000 to maintain it over the year.

$(\$80,000 - \$20,000) / \$800,000 = 7.5\%$

## 3) Return on investment (ROI)

ROI is a measure of how much is made on a real estate investment when it is sold. You can calculate ROI using the below formula.

### ROI Formula:

$(\text{Final Value} - \text{Initial Cost}) / \text{Cost} = \text{ROI}$

For instance, if you buy a property for \$400,000 and sell it later for \$450,000, the ROI would be:

$(\$450,000 - \$400,000) / \$400,000 = 12.5\%$

## 4) Price per square foot

To calculate, take the property's sales price and divide it by the square footage.

For example, if the home has 2,000 square feet and the sales price is \$400,000, then the price per square foot would be  $\$400,000 / 2000 = \$200$ .

## 5) Gross rent multiplier

Calculating the gross rent multiplier (GRM) will help determine a property's value. To get this information, you'll need the annual rental income and property purchase price.

### Gross Rent Multiplier formula:

$\text{Purchase Price or Value} / \text{Gross Rental Income} = \text{Gross rent multiplier}$

For instance, if the property's value is \$200,000 and the annual rent income is \$24,000, then the GRM for the property would be:

$\text{GRM} = 200,000 / 24,000 = 8.3$