Real Estate Math Study Guide

1. Commission Calculations
- **Formula:**

Commission = Sale Price × Commission Rate
- **Example:**

If the sale price is $250,000 and the commission rate is 5%,
Commission = $250,000 × 0.05 = $12,500
- **Key Points:**
    - Understand how to calculate both total and split commissions.
    - Know how to apply commission rates for different agents or brokers.

2. Percentage Calculations
- **Formula:**

Percentage = (Part ÷ Whole) × 100
- **Example:**

If the home sells for $300,000 and the commission is $18,000,
Percentage = ($18,000 ÷ $300,000) × 100 = 6%
- **Key Points:**
    - Percentages are commonly used in calculating commissions, taxes, and profit margins.

3. Loan-to-Value Ratio (LTV)
- **Formula:**

LTV = (Loan Amount ÷ Appraised Value or Purchase Price) × 100
- **Example:**

Loan = $180,000, Property Value = $200,000
LTV = ($180,000 ÷ $200,000) × 100 = 90%
- **Key Points:**
    - LTV is important for understanding mortgage requirements and limits on financing.

4. Property Tax Calculations

- **Formula:**

Property Tax = Assessed Value × Tax Rate

- **Example:**

Assessed value = $250,000, Tax rate = 1.2%

Property Tax = $250,000 × 0.012 = $3,000

- **Key Points:**
    - Be familiar with tax assessments and how different tax rates affect property taxes.

5. Area (Square Footage)

- **Formula:**

Area = Length × Width

- **Example:**

Room length = 15 feet, Width = 12 feet

Area = 15 × 12 = 180 square feet

- **Key Points:**
    - Remember that square footage calculations are often required for pricing and leasing.

6. Gross Rent Multiplier (GRM)

- **Formula:**

GRM = Property Price ÷ Gross Annual Rent

- **Example:**

Property Price = $500,000, Gross Annual Rent = $40,000

GRM = $500,000 ÷ $40,000 = 12.5

- **Key Points:**
    - Use GRM to evaluate rental properties and understand their investment potential.

7. Capitalization Rate (Cap Rate)
- **Formula:**

Cap Rate = Net Operating Income (NOI) ÷ Property Value
- **Example:**

NOI = $30,000, Property Value = $300,000

Cap Rate = $30,000 ÷ $300,000 = 0.10 (or 10%)
- **Key Points:**
    - The Cap Rate is used to estimate the potential return on investment for a property.

8. Seller's Proceeds
- **Formula:**

Seller's Proceeds = Sale Price − Selling Expenses − Mortgage Balance
- **Example:**

Sale Price = $350,000, Selling Expenses = $20,000, Mortgage Balance = $150,000

Seller's Proceeds = $350,000 − $20,000 − $150,000 = $180,000
- **Key Points:**
    - Be familiar with calculating the seller's net gain after fees and mortgage balances are subtracted.

9. Appreciation
- **Formula:**

Appreciation = Initial Value × (1 + Appreciation Rate) ^ Number of Years
- **Example:**

Initial Value = $200,000, Appreciation Rate = 3%, Years = 5

Appreciation = $200,000 × (1 + 0.03)^5 = $200,000 × 1.159 = $231,800
- **Key Points:**
    - Use appreciation calculations to estimate future property values over time.

10. Mortgage Payment Formula (PMI)
  • **Formula:**
Loan Payment = Principal × Interest Rate ÷ (1 − (1 + Interest Rate)^-n)
  • **Example:**
Use a financial calculator or software to calculate monthly payments, considering loan terms.
  • **Key Points:**
    • Be prepared to use a calculator to determine mortgage payments, including principal and interest portions.

Important Tips for Real Estate Math:

  • **Practice Mental Math:** Familiarize yourself with quick calculations to save time.
  • **Use a Calculator:** You will likely be allowed to use one during the exam, so practice with it.
  • **Double-Check Your Work:** Always take a second look at your calculations to avoid errors.
  • **Understand the Concepts:** Don't just memorize formulas—understand when and why to use them.

This guide covers the most common real estate math topics and formulas you'll encounter on the exam. Practice these regularly to feel confident and prepared!