

Important Formulas of Mortgage and Real Estate PDF



Formulas Examples with Units

List of 15 Important Formulas of Mortgage and Real Estate

1) 70 Percent Rule Formula

Formula

$$BP_{\max} = (ARV \cdot 0.7) - ERC$$

Example

$$43500 = (70000 \cdot 0.7) - 5500$$

Evaluate Formula 

2) Break Even Ratio Formula

Formula

$$BER = \frac{DSC + OE}{GOI}$$

Example

$$1.3565 = \frac{7600 + 8000}{11500}$$

Evaluate Formula 

3) Capitalisation Rate Formula

Formula

$$r_{\text{cap}} = \left(\frac{NOI}{CMV} \right) \cdot 100$$

Example

$$12.9348 = \left(\frac{59500}{460000} \right) \cdot 100$$

Evaluate Formula 

4) Commission Value Formula

Formula

$$CV = CR \cdot SP$$

Example

$$125000 = 0.05 \cdot 2500000$$

Evaluate Formula 

5) Debt Ratio Formula

Formula

$$DR = \frac{TD}{TA}$$

Example

$$25000 = \frac{2500000000}{100000}$$

Evaluate Formula 

6) Debt Service Coverage Ratio using ADS Formula

Formula

$$DSCR = NOI - ADS$$

Example

$$5 = 59500 - 59495$$

Evaluate Formula 

7) Floor Area Ratio Formula

Formula

$$FAR = \frac{GFA}{TLS}$$

Example

$$8.5714 = \frac{12000}{1400}$$

Evaluate Formula 



8) Gross Rent Multiplier Formula

Formula

$$GRM = \frac{PV}{GRI}$$

Example

$$17.9991 = \frac{418120}{23230}$$

Evaluate Formula 

9) Land to Building Ratio Formula

Formula

$$LTB = \frac{Ar_L}{Ar_B}$$

Example with Units

$$1.5233 = \frac{457000 \text{ m}^2}{300000 \text{ m}^2}$$

Evaluate Formula 

10) Loan to Value Ratio Formula

Formula

$$LTV\% = \left(\frac{MA}{APV} \right) \cdot 100$$

Example

$$74.2857 = \left(\frac{26000}{35000} \right) \cdot 100$$

Evaluate Formula 

11) Monthly Mortgage Payment Formula

Formula

$$p = \frac{MA \cdot R \cdot (1 + R)^n}{(1 + R)^n - 1}$$

Example

$$156000.0006 = \frac{26000 \cdot 6 \cdot (1 + 6)^{10}}{(1 + 6)^{10} - 1}$$

Evaluate Formula 

12) Price per Square Foot Formula

Formula

$$P_{sqf} = \frac{PSP}{T_{sqf}}$$

Example

$$7500 = \frac{450000}{60}$$

Evaluate Formula 

13) Price to Rent Ratio Formula

Formula

$$PTRR = \frac{MHP}{MAR}$$

Example

$$16.6667 = \frac{2700000}{162000}$$

Evaluate Formula 

14) Rental Yield Formula

Formula

$$RY = \left(\frac{ARI}{PV} \right) \cdot 100$$

Example

$$11.9583 = \left(\frac{50000}{418120} \right) \cdot 100$$

Evaluate Formula 



15) Return on Equity Formula

Formula

$$ROE = \frac{AR}{TE}$$

Example

$$0.373 = \frac{87650}{235000}$$

Evaluate Formula 



Variables used in list of Important Formulas of Mortgage and Real Estate above

- **ADS** Annual Debt Service
- **APV** Appraised Property Value
- **AR** Annual Return
- **Ar_B** Area of Building (Square Meter)
- **Ar_L** Area of Land (Square Meter)
- **ARI** Annual Rental Income
- **ARV** After Repair Value
- **BER** Break Even Ratio
- **BP_{max}** Maximum Buying Price
- **CMV** Current Market Value
- **CR** Commission Rate
- **CV** Commission Value
- **DR** Debt Ratio
- **DSC** Debt Servicing Costs
- **DSCR** Debt Service Coverage Ratio
- **ERC** Estimated Repair Costs
- **FAR** Floor Area Ratio
- **GFA** Gross Floor Area
- **GOI** Gross Operating Income
- **GRI** Potential Gross Rental Income
- **GRM** Gross Rent Multiplier
- **LTB** Land to Building Ratio
- **LTV%** Loan to Value Ratio
- **MA** Mortgage Amount
- **MAR** Median Annual Rent
- **MHP** Median Home Price
- **n** Compounding Periods
- **NOI** Net Operating Income
- **OE** Operating Expenses
- **p** Monthly Payment
- **P_{sqf}** Price per Square Foot
- **PSP** Property Sale Price
- **PTRR** Price to Rent Ratio
- **PV** Property Value

Constants, Functions, Measurements used in list of Important Formulas of Mortgage and Real Estate above

- **Measurement: Area** in Square Meter (m²)
Area Unit Conversion 



- **R** Interest Rate
- **r_{cap}** Capitalisation Rate
- **ROE** Return on Equity
- **RY** Rental Yield
- **SP** Final Sale Price
- **T_{sqf}** Total Square Footage
- **TA** Total Assets
- **TD** Total Debt
- **TE** Total Equity
- **TLS** Total Lot Size



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