*Mortgage Formulas*

**Basic payment formula**

To calculate the mortgage payment, use the following formula:

PMT = (PV x IR) / (1 - (1 + IR)-NP)

Java implementation: PMT = (PV \* IR) / (1 – Math.pow(1 + IR, -NP))

Where:

PMT = Monthly Payment

PV = Principle Value (amount of loan)

IR = Interest Rate, by month

NP = Note Period, or mortgage term in months

IR = APR / 100 / 12

NP = Years \* 12 (for example, 5 years means NP = 60)

APR = Annual Percentage Rate (for example 6.25)

Use the formula above when APR > 0.

If APR = 0 (an interest-free loan), then PMT = PV / NP.

**Amortization Table**

Pseudocode for the calculation process

*/\*\* initialize the balances \*\*/*

loanBalance = NP \* payment

principalBalance = PV

interestBalance = loanBalance - principalBalance

totalPrincipalPaid = 0

totalInterestPaid = 0

*/\*\* step through all the payment periods \*/*

For paymentNumber from 1 to NP:

*/\*\**

*The portion of the payment that goes to interest is based on*

*the remaining principal balance.*

*\*\*/*

interestPaidThisMonth = interestRate \* principalBalance

*/\*\**

*The rest of the payment goes to principal.*

*\*\*/*

principalPaidThisMonth = payment – interestPaidThisMonth

*/\*\**

*Update the remaining balances and total paid values*

*\*\*/*

loanBalance = loanBalance - payment

principalBalance = principalBalance – principalPaidThisMonth

totalPrincipalPaid = totalPrincipalPaid + principalPaidThisMonth

interestBalance = interestBalance - interestPaidThisMonth

totalInterestPaid = totalInterestPaid + interestPaidThisMonth

End For