**Formula Sheet: Mini Project: TO BUY OR NOT TO BUY (CAR)**



Installment Loans:

**Loan Formula** to calculate the **monthly payment**:

where *Pmt*: amount of monthly payment

 *P*: principal

*APR*: annual percentage rate (as a decimal)

*Y*: time in years



Finding the **accumulated balance**:

  where *A*: accumulated balance after *t* years

 *Pmt*: amount of monthly payment

 *Y*: time in years

Finding the **interest**:

  where *I*: interest

 *A*: accumulated balance

 *P*: principal

# REPAYING an Installment Loan EARLY

**Rule of 78s** to find the **unearned interest** at the end of the *m*th month:

** where *u* : unearned interest (interest saved by paying off loan early)

 *I*: interest (original finance charge)

 *n*: original number of payments:  (for *Y*: time in years)

 *k*: number of remainingmonthly payments (excluding current

 payment): *k* = *n* – *m*

**Money still owed** at the end of the *mt*h month (pay-off amount):

 where *k*: number of remainingmonthly payments (excluding current

 payment)

 *k* = *n* – *m*

 *Pmt*: amount of monthly payment

*u* : unearned interest (interest saved by paying off loan early)