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

C:\Program Files\Microsoft Expression\MEDIA\CAGCAT10\j0222015.wmf

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)