8C – Amortisation Tables

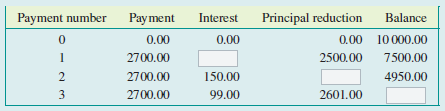
**RECORDING REDUCING BALANCE LOANS (eg buying a house or car)**

For a reducing balance loan, you make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the loan each period that is greater than the interest on the previous balance

The **difference** between the payment and interest is the principal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount for that period

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the value of the loan at the end of each compounding period.

*Consider the following amortisation table for a reducing balance loan:*



1. *Calculate the* ***interest rate (r)*** *per compounding period:*

*(Either using an annual interest rate or a known interest value from the table)*

1. *Calculate the value of* ***R****:*
2. *Write the* ***recurrence relation*** *for the reducing balance loan:*
3. *Use NestList to calculate / confirm the four* ***balance values*** *in the table:*
4. *Use two different methods to calculate the* ***missing interest value*** *in the table:*
5. *Calculate the* ***missing principal reduction value*** *in the table:*

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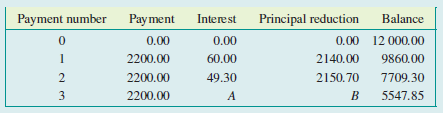
**RECORDING ANNUITIES WITH PRINCIPAL REDUCTION (eg a retirement investment)**

For an annuity with principal reduction, you receive a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for living expenses each period that is greater than the interest on the previous balance

The **difference** between the payment and interest is the principal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount for that period

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the value of the investment at the end of each compounding period.

*Consider the following amortisation table for an annuity with principal reduction:*



1. *Calculate the* ***interest rate (r)*** *per compounding period:*

*(Either using an annual interest rate or a known interest value from the table)*

1. *Calculate the value of* ***R****:*
2. *Write the* ***recurrence relation*** *for the annuity with principal reduction:*
3. *Use NestList to calculate / confirm the four* ***balance values*** *in the table:*
4. *Use the interest rate to calculate the missing interest value, A:*
5. *Calculate the missing principal reduction value, B, as the payment minus the interest:*

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**RECORDING COMPOUND INTEREST INVESTMENTS WITH REGULAR DEPOSITS**

For compound interest investments with regular deposits, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ goes into the investment each compounding period to increase its value

The **sum** of the payment and the interest is the principal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount for that period

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the value of the investment at the end of each compounding period.

*Consider the following amortisation table for a compound interest investment with regular deposits:*

A screenshot of a calculator

Description automatically generated

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| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |

1. *Calculate the* ***interest rate*** *per compounding period:*

*(Either using an annual interest rate or a known interest value from the table)*

1. *Calculate the value of* ***R****:*
2. *Write the* ***recurrence relation*** *for the compound interest investment with regular deposits:*
3. *Use NestList to calculate the next two* ***balance values*** *in the table:*
4. *Make appropriate calculations to fill out the next two rows of the table:*