

# LOANS & ANNUITIES.

## \* Combining Linear and Geometric G+D.

In reality loans involve a fixed repayment at regular intervals. This would be a linear aspect. The interest would be calculated as compounding. This is a geometric component.

The recurrence relation for this would be of the form.

$$V_{n+1} = R \times V_n \pm D \quad V_0 = \text{Starting Value.}$$

Eg Write down the first 4 terms in the sequence generated by the recurrence relation

$$V_0 = 3 \quad V_{n+1} = 4V_n - 1$$

$$V_0 = 3.$$

$$V_1 = 4 \times 3 - 1 = 12 - 1 = 11$$

$$V_2 = 4 \times 11 - 1 = 44 - 1 = 43$$

$$V_3 = 4 \times 43 - 1 = 172 - 1 = 171$$

on Calc.

Example 2.

Pg 304

2020 COVID

Ex 9A

ALL