**2. Setup: Recursive Future Value Formula**

We will use the formula for **future value**:

FVn=FVn−1×(1+r)FV\_n = FV\_{n-1} \times (1 + r)FVn​=FVn−1​×(1+r)

Where:

* FV₀ is the present value,
* r is the growth rate per period (as a decimal),
* n is the number of future periods.