Example 4

Calculate the future value of an instalment savings plan based on saving €600 at the **start** of each year @ 4% per annum for 5 years.

(i) Calculate the present value of these payments.

(ii) Hence show that if the present value was put on deposit at the same rate for the same length of time, it would have the same future value.

$F = P(1+i)^t$

$i = 4\%$

$t = 5$ years

$P = 600$

Geometric Series

$S_n = \frac{a(1-r^n)}{1-r}$

Find Sum of Series of future Values of investing 600...

$F_{TOTAL} = 600(1.04)^5 + 600(1.04)^4 + \ldots + 600(1.04)^1$

$r = 1.04$ $T_1 = a$

$a = 624$ $r = 1.04$ $n = 5$

$f_{TOTAL} = \frac{624(1-1.04^5)}{(1-1.04)} \approx €3,379.79$