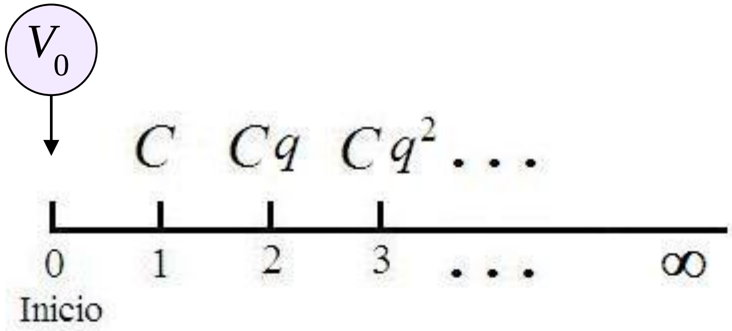
Overview of a Geometric Perpetual Ordinary Annuity



$$V_0 = C(1+i)^{-1} + Cq(1+i)^{-2} + Cq^2(1+i)^{-3} + \cdots$$

$$V_0 = \lim_{n\to\infty} C \cdot a_{(1,q)\,\overline{n}|\,i} = \begin{cases} \lim\limits_{n\to\infty} C \dfrac{1-\left(\dfrac{q}{1+i}\right)^n}{1+i-q} & 1+i \neq q \\ \lim\limits_{n\to\infty} Cn(1+i)^{-1} & 1+i \leq q \end{cases} = \begin{cases} C\dfrac{1}{1+i-q} & 1+i > q \\ \infty & 1+i < q \\ \infty & 1+i = q \end{cases}$$

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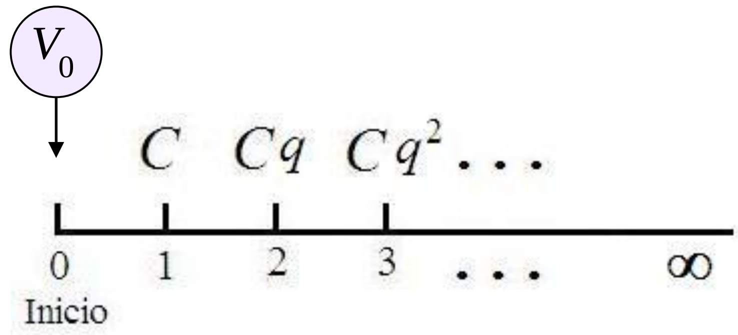
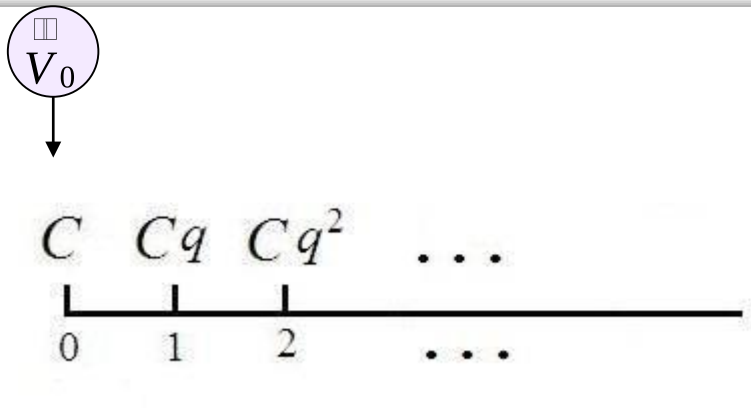


$$V_0 = C(1+i)^{-1} + Cq(1+i)^{-2} + Cq^2(1+i)^{-3} + \cdots$$

PRESENT VALUE

$$V_0 = C \cdot a_{(1,q)\,\overline{\infty}|\,i} = \begin{cases} C \dfrac{1}{1+i-q} & \text{si } 1+i > q \\ \infty & \text{si } 1+i \le q \end{cases}$$

Overview of a Geometric Perpetual Annuity Due



$$\ddot{V}_0 = C + Cq(1+i)^{-1} + Cq^2(1+i)^{-2} + \cdots$$

$$\ddot{V}_0 = (1+i)V_0$$

PRESENT VALUE

$$\ddot{V}_0 = C \cdot \ddot{a}_{(1,q)\,\overline{\infty|}\,i} = \begin{cases} C\dfrac{1}{1+i-q}(1+i) & \text{si } 1+i>q \\ \infty & \text{si } 1+i \le q \end{cases}$$

Property

$$\ddot{a}_{(C,q)\,\overline{\infty|}\,i} = a_{(C,q)\,\overline{\infty|}\,i}(1+i)$$