

$$u_m = v_m - u_n$$

$$\text{Donc } u_{m+1} = v_{m+1} - u_{m+1} = (u_n + v_n) / 2 - (u_n + 2v_n) / 3$$

$$= \frac{u_n}{2} - \frac{u_n}{3} + \frac{v_n}{2} - \frac{2}{3}v_n$$

$$= \frac{1}{6}u_n - \frac{1}{6}v_n = \frac{1}{6}(u_n - v_n) = \frac{1}{6}u_m$$

Donc $u_{m+1} = \frac{1}{6}u_m$ donc u_m suite géométrique de raison $1/6$

$$u_m = 12 \times (1/6)^m$$

$$T_{m+1} = 2u_{m+1} + 3v_{m+1} = u_n + v_m + u_n + 2v_n = 2u_n + 3v_n = T_m = T_0$$

$$\text{Donc } T_m = T_0 = 36$$

$$\text{Donc } \begin{cases} v_m - u_n = 12 \times (1/6)^m \\ 2u_n + 3v_n = 36 \end{cases} \Leftrightarrow \begin{cases} u_m = 18 - \frac{3}{2}v_m \\ v_m - 18 + \frac{3}{2}v_m = 12 \times (1/6)^m \end{cases}$$

~~$$\begin{cases} \frac{3}{2}v_m = 18 + 12 \times (1/6)^m \\ u_m = 18 - \frac{3}{2}v_m \end{cases}$$~~

~~à résoudre pour la suite~~

$$\Leftrightarrow \begin{cases} \frac{5}{2}v_m = 18 + 12 \times (1/6)^m \\ u_m = 18 - \frac{3}{2}v_m \end{cases} \Leftrightarrow \begin{cases} v_m = \frac{36 + 24 \times (1/6)^m}{5} \\ u_m = 18 - \frac{3}{2} \times \frac{(36 + 24 \times (1/6)^m)}{5} \end{cases}$$

$$\Leftrightarrow \begin{cases} v_m = \frac{36 + 24 \times (1/6)^m}{5} \\ u_m = \frac{180 - 108 - 72 \times (1/6)^m}{10} \end{cases}$$

$$\Leftrightarrow \begin{cases} v_m = \frac{36 + 24 \times (1/6)^m}{5} \\ u_m = \frac{36 - 36 \times (1/6)^m}{5} \end{cases}$$