Team Round - continued

F) Note: $a_n = \dfrac{1}{2 + a_{n-1}}$ So, rather than thinking of a_4 as $\dfrac{1}{2+\dfrac{1}{2+\dfrac{1}{2+\dfrac{1}{2}}}}$,

we look at $a_4 = \dfrac{1}{2+a_3} = \dfrac{1}{2+\dfrac{5}{12}} = \dfrac{12}{29}$

Lining up the a-sequence evidence $\begin{array}{cccccc} 1 & 2 & 5 & 12 & X & Z \\ 2 & 5 & 12 & 29 & Y & T \end{array}$,we notice that $Y = Z$ and $T = X + 2Y$.

Therefore, the a-sequence continues $\dfrac{29}{2(29)+12} = \dfrac{29}{70}, \dfrac{70}{169}, \dfrac{169}{408}, \dfrac{408}{985}, \dfrac{985}{2378}, \dfrac{2378}{5741}$.

$a_{10} = \dfrac{2378}{5741}$ ➔ $\boldsymbol{A_{10}} = 1 + \dfrac{2378}{5741} = \underline{\boldsymbol{\dfrac{8119}{5741}}}$