if
$$k = 0$$

return $a_1 = 1$

else

return
$$\alpha_{2k+1} = (2k)! \left(\sum_{j=0}^{k-1} \frac{\alpha_{2j+1}}{(2j+1)!} \cdot \frac{\alpha_{2(k-j)+1}}{(2(k-j)+1)!} \right)$$