Soluție

1. $a_{n+1}-a_n=(n+1)^2-(n+1)-n^2+n$, $a_{n+1}-a_n=2n$,
$a_{n+1}-a_n>0, \forall n\in \mathbb{N}^* \Rightarrow (a_n)_{n\in N^*}$ este strict monoton .

2. $f(x)=(x+1)^2$, $(f\circ g)(x)=(x-2008+1)^2=(x-2007)^2\geq 0, \forall x\in \mathbb{R}$.

3. $x+\dfrac{\pi}{3}=\dfrac{\pi}{2}-x+k\pi, k\in \mathbb{Z} \Rightarrow x+\dfrac{\pi}{3}=\dfrac{\pi}{2}-x+k\pi, k\in \mathbb{Z}$.

4. $x\geq 3, C_x^{x-1}=x-1, C_{x-1}^2=\dfrac{(x-1)(x-2)}{2}$, $x^2-x-16\leq 0 \Rightarrow x\in \{3;4\}$.

5. $\dfrac{m}{m+2}=\dfrac{m+2}{4m}\neq \dfrac{-1}{-8} \Rightarrow m\in \left\{2;-\dfrac{2}{3}\right\}$.

6. $tgC=tg(\pi-(A+B))=-tg(A+B)$, $tg(A+B)=\dfrac{tgA+tgB}{1-tgAtgB} \Rightarrow tgC=1 \Rightarrow C=\dfrac{\pi}{4}$.