Ordini di infinitesimo tra successioni

Proposizione	Vera	Falsa
$a_n = \dfrac{n^2-1}{n^2+1},\ b_n = \dfrac{n^2}{n^4+n^3-7} \Rightarrow a_n \simeq b_n$	☐	☐
$a_n = \dfrac{n^2-1}{n^2+1},\ b_n = \dfrac{n^2}{n^4+n^3-7} \Rightarrow a_n = O(b_n)$	☐	☐
$a_n = \dfrac{n^2}{n^4+n^3-7},\ b_n = \dfrac{n^2-1}{n^2+1} \Rightarrow a_n = o(b_n)$	☐	☐
$a_n = \dfrac{n^2}{n^4+n^3-7},\ b_n = \dfrac{n^2-1}{n^2+1} \Rightarrow a_n = O(b_n)$	☐	☐
$a_n = \dfrac{n^2-1}{n^2+1} \Rightarrow a_n = o(1)$	☐	☐
$a_n = \dfrac{n^2}{n^4+n^3-7} \Rightarrow a_n = o(1)$	☐	☐
$a_n = \left(1+\dfrac{1}{n}\right)^n \Rightarrow a_n = O(1)$	☐	☐
$a_n = \left(1+\dfrac{1}{n}\right)^n \Rightarrow a_n \simeq 1$	☐	☐
$a_n = \left(1+\dfrac{1}{n}\right)^{n^2} \Rightarrow a_n \simeq 1$	☐	☐
$a_n = \sqrt{n^2+2} - n \Rightarrow a_n \simeq \dfrac{1}{n}$	☐	☐
$a_n = \sqrt[20]{n^{20}+20} - n \Rightarrow a_n \simeq \dfrac{1}{n}$	☐	☐
$a_n = \sqrt[20]{n^{20}+20n^{19}} - n \Rightarrow a_n \simeq \dfrac{1}{n}$	☐	☐
$a_n = \sqrt[20]{n^{20}+20n^{19}} - n \Rightarrow a_n \simeq n^{18}$	☐	☐
$a_n = \sqrt[20]{n^{20}+20n^{19}} - n,\ b_n = \sqrt[20]{n^{20}+20} - n \Rightarrow a_n = o(b_n)$	☐	☐
$a_n = \sqrt[20]{n^{20}+20n^{19}} - n,\ b_n = \sqrt[20]{n^{20}+20} - n \Rightarrow b_n = o(a_n)$	☐	☐
$a_n = \sqrt[n]{e} \Rightarrow a_n \simeq 1$	☐	☐
$a_n = \sqrt[n]{e} \Rightarrow a_n - 1 \simeq \frac{1}{n}$	☐	☐
$a_n \simeq 1 \Rightarrow a_n - 1 \simeq \frac{1}{n}$	☐	☐
$a_n = \sqrt[n]{2} \Rightarrow a_n \simeq 1$	☐	☐
$a_n = \sqrt[n]{2} \Rightarrow a_n - 1 \simeq \frac{1}{n}$	☐	☐

Successione	Limite
$a_n = n(\sqrt[n]{2} - 1)$	
$a_n = n(\sqrt[n^2]{2} - 1)$	

Affermazione (per quali α e β vale ?)	α	β
Se $a_n = \sqrt[20]{n^{20} + 20n^{12} - n^6 + 1} - n)$, allora $a_n \simeq \frac{1}{n^\alpha}$		
Se $a_n = \sqrt[20]{n^{20} - n^{12} + n^6 - 1} - n)$, allora $a_n \simeq \frac{\beta}{n^\alpha}$		
Se $a_n = \frac{n+1}{n-1}$, allora $a_n = 1 + \frac{\alpha}{n} + o\left(\frac{1}{n}\right)$		
Se $a_n = \frac{n+2}{n-2}$, allora $a_n = 1 + \frac{\alpha}{n} + \frac{\beta}{n^2} + o\left(\frac{1}{n^2}\right)$		
Se $a_n = \sqrt{n^4 + 1} - n^2$, allora $a_n = \alpha n^\beta + o(n^\beta)$		