BY GIMUSI 15/01/17

Come si risolve il seguente limite?
$\lim_{x\to+\infty} n^a(\log(n^2+7)-\log(n^2+3))$

$$n^\alpha\left(\log(n^2+7)-\log(n^2+3)\right)=$$

$$=n^\alpha\left(\log n^2+\log(1+7/n^2)-\log n^2-\log(1+3/n^2)\right)=$$

$$=n^\alpha\left(\frac{7}{n^2}-\frac{3}{n^2}+o\left(\frac{1}{n^2}\right)\right)=$$

$$=4\frac{n^\alpha}{n^2}+o\left(\frac{n^\alpha}{n^2}\right)\rightsquigarrow$$

$$\begin{cases}\alpha>2 & \ell=+\infty\\ \alpha=2 & \ell=4\\ \alpha<2 & \ell=0\end{cases}$$