

CALCOLO I SEGUENTI LIMITI:

$$1) \lim_{x \rightarrow +\infty} (\sqrt{x+1} - \sqrt{x+2}) = \infty - \infty \text{ F.I.}$$

$$\lim_{x \rightarrow +\infty} \frac{(\sqrt{x+1} - \sqrt{x+2}) \left[(\sqrt{x+1}) + (\sqrt{x+2}) \right]}{(\sqrt{x+1} + \sqrt{x+2})} =$$

$$\lim_{x \rightarrow +\infty} \frac{x+1-x-2}{\sqrt{x+1} + \sqrt{x+2}} = \lim_{x \rightarrow +\infty} \frac{-1}{\sqrt{x+1} + \sqrt{x+2}} = -\frac{1}{\infty} = 0$$

$$2) \lim_{x \rightarrow +\infty} (\sqrt{x^2+1} - \sqrt{x-4}) = \infty - \infty \text{ F.I.}$$

$$\lim_{x \rightarrow +\infty} \frac{(\sqrt{x^2+1} - \sqrt{x-4}) \cdot (\sqrt{x^2+1} + \sqrt{x-4})}{\sqrt{x^2+1} + \sqrt{x-4}} =$$

$$\lim_{x \rightarrow +\infty} \frac{x^2+1-x+4}{\sqrt{x^2+1} + \sqrt{x-4}} = \lim_{x \rightarrow +\infty} \frac{x^2-x+5}{\sqrt{x^2+1} + \sqrt{x-4}} = \frac{\infty^2}{\infty} = +\infty$$