The simpler is the ratio test

Thm Let $r^* = \overline{\lim_{n\to\infty}} \frac{a_{n+1}}{a_n}$

and $r_* = \underline{\lim_{n\to\infty}} \frac{a_{n+1}}{a_n}$

(i) If $r^* < 1$ then $\sum_{n=1}^{\infty} a_n$ **conv abs**

(ii) If $r_* > 1$ then $\sum_{n=1}^{\infty} a_n$ **div**

(iii) If $r_* \leq 1 \leq r^*$ the test in **not** conclusive