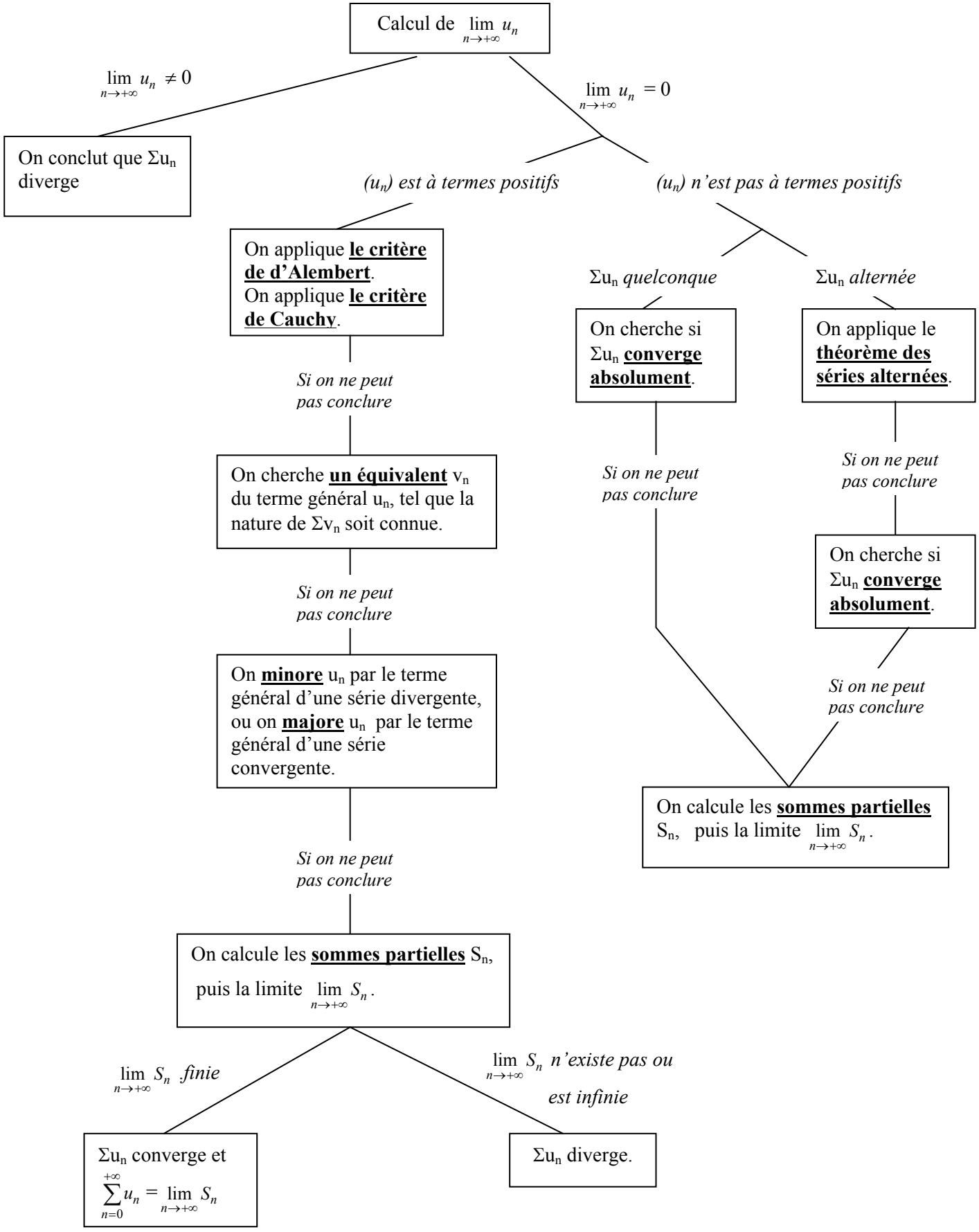Etude de la nature d'une série Σu_n.