

Recall: Given a series  $\sum_{k=1}^{\infty} a_k$ , if  $\sum_{k=1}^{\infty} |a_k|$  diverges, then the original series may converge or diverge.

But when you do the ratio test for  $\sum_{k=1}^{\infty} |a_k|$ , if  $\rho > 1$  or  $= \infty$ , then you *can* conclude that the *original* series diverges!