

Problem of the Week-2: Series of Cubes

Does there exist a sequence of real numbers $\{a_n\}$ such that the series $\sum_{n=0}^{\infty} a_n$ converges but the series $\sum_{n=0}^{\infty} a_n^3$ diverges?

As always prove your answer.

Posting Date 1/27/12. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 2/10/12.