Sequences vs. Series

Question

Try to think of a specific example for each of a_n, b_n, c_n and d_n.
For one of them, there cannot be any example, because the
situation described is impossible. Which one is impossible?

A. The sequence a_n is positive and decreasing and $\displaystyle\sum_{n=1}^{\infty} a_n$ diverges.

B. The sequence b_n alternates and $\displaystyle\sum_{n=1}^{\infty} b_n$ converges.

C. $\displaystyle\lim_{n\to\infty} c_n = 0$ and $\displaystyle\sum_{n=1}^{\infty} c_n = 1$.

D. $\displaystyle\lim_{n\to\infty} d_n = 1$ and $\displaystyle\sum_{n=1}^{\infty} d_n = 1$.