Exercise 7.iii.28. [20Z] *Note:* Task of 26 Jan 2016. *(Solved on 2022-01-20)*

Let

$$z_n = \frac{1 \cdot 3 \cdot 5 \cdot 7 \cdots (2n-1)}{2 \cdot 4 \cdot 6 \cdot 8 \cdots (2n)} \quad ;$$

Show that $\lim_{n \to \infty} z_n = 0$ *but*

$$\sum_{n=1}^{\infty} z_n = \infty \quad .$$

Solution 1. [213]