

Exercises

E7.27 [ODW] Given a series $\sum_n^\infty a_n$ tell if the following conditions are necessary and/or sufficient for convergence.

$$\forall \varepsilon > 0 \exists m \in \mathbb{N} \forall n > m \forall k \in \mathbb{N} \left| \sum_{j=n}^{n+k} a_k \right| < \varepsilon \quad (7.27)$$

$$\forall \varepsilon > 0 \forall k \in \mathbb{N} \exists m \in \mathbb{N} \forall n > m \left| \sum_{j=n}^{n+k} a_k \right| < \varepsilon \quad (7.28)$$

$$\forall \varepsilon > 0 \exists m \in \mathbb{N} \forall n > m \forall k \in \mathbb{N} \sum_{j=n}^{n+k} |a_k| < \varepsilon \quad (7.29)$$

$$\forall \varepsilon > 0 \forall k \in \mathbb{N} \exists m \in \mathbb{N} \forall n > m \sum_{j=n}^{n+k} |a_k| < \varepsilon \quad (7.30)$$

Solution 1. [ODX]