

Definition 7.d.6. [230] Having fixed $(a_n)_{n \in \mathbb{N}}$ a real sequence, $(a_{n_k})_{k \in \mathbb{N}}$ is a subsequence when n_k is a strictly increasing sequence of natural numbers.

Similarly having fixed $f : J \rightarrow \mathbb{R}$, let $H \subseteq J$ be a cofinal subset (as defined in [06P]): We know from [06X] that H is filtering. Then the restriction $h = f|_H$ is a net $h : H \rightarrow \mathbb{R}$, and is called "a **subnet** of f ".

More in general, suppose that (H, \leq_H) is cofinal in (J, \leq) by means of a map $i : H \rightarrow J$; this means (adapting [(3.121)]) that

$$(\forall h_1, h_2 \in H, h_1 \leq_H h_2 \Rightarrow i(h_1) \leq i(h_2)) \wedge (\forall j \in J \exists h \in H, i(h) \geq j) \quad (7.d.7)$$

then $h = f \circ i$ is a **subnet**.