

**Definition 3.iv.14.** [06M] (Solved on 2022-11-24) Let  $(X, \leq)$  be a (partially) ordered set, we will say that it is **filtering**<sup>a</sup> if

$$\forall x, y \in X \exists z \in X, x < z \wedge y < z \quad . \quad (3.iv.15)$$

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<sup>a</sup>As defined in Definition 4.2.1 of the notes [?]. It is also called *strongly directed set*.