

4th Exercise Sheet, Set Theory of the Real Line, WS 2014/2015

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Exercise 7

Let I, J be two ideals such that there exists a Tukey function $f : I \rightarrow J$. Show that $\text{add}(J) \leq \text{add}(I)$ and $\text{cof}(J) \geq \text{cof}(I)$.

Exercise 8

Let $U \subseteq 2^\omega$ be a non-empty open set and $k \in \omega$. There is a countable family \mathcal{V} of open subsets of U such that:

- every dense open subsets of 2^ω contains (as a subset) an element of \mathcal{V} ;
- the intersection of any k elements of \mathcal{V} is non-empty.

(Hint: look at Lemma 2.3.5 on page 49 in [BJ95])