

# 6<sup>th</sup> Exercise Sheet, Set Theory of the Real Line, WS 2014/2015

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27 November, 2014

## Exercise 11

1. Let  $i : \mathbb{P} \rightarrow \mathbb{Q}$  be a complete embedding, and  $H$   $\mathbb{Q}$ -generic over  $M$ . Show that  $M[i^{-1}(H)] \subseteq M[H]$ .
2. Let  $i : \mathbb{P} \rightarrow \mathbb{Q}$  be a dense embedding, and  $H$   $\mathbb{Q}$ -generic over  $M$ . Show that  $M[i^{-1}(H)] = M[H]$ .

## Exercise 12

Let  $\langle (\mathbb{P}_\xi, \pi_\xi) : \xi \leq \mu \rangle$  be a  $\mu$ -iteration such that for each  $\xi < \mu$ ,  $\Vdash_{\mathbb{P}_\xi}$  “ $\pi$  is  $\kappa$ -cc”.

Then for each  $\xi \leq \mu$ ,  $\mathbb{P}_\xi$  is  $\kappa$ -cc.

(Hint: see Chapter 8, Lemma 5.11 and 5.12 in [Ku80].)