

rel-pre-preserving-compose^{11,40}

$\forall es:ES, P, Q:(E \rightarrow \mathbb{P}), R:(E \rightarrow E \rightarrow \mathbb{P}), f_1:(\{e:E \mid P(e)\} \rightarrow \{e:E \mid Q(e)\}), f_2:(\{e:E \mid Q(e)\} \rightarrow E).$
(f_1 is R -pre-preserving on P & f_2 is R -pre-preserving on Q)
 $\Rightarrow f_2 \circ f_1$ is R -pre-preserving on P