

...

1: $\text{rev}(\text{rev}[]) = []$

...

2: $\text{rev}(\text{rev}[x5]) = [x5]$

3: $\text{rev}(\text{rev } xs) = xs, \text{rev}(\text{rev } ys) = ys$ assumptions

4: $\text{rev}(\text{rev}(xs ++ ys))$

5: $= \text{rev}(\text{rev } ys ++ \text{rev } xs)$ Unfold

6: $= \text{rev}(\text{rev } xs) ++ \text{rev}(\text{rev } ys)$ Unfold

7: $= \text{rev}(\text{rev } xs) ++ ys$ Unfold

8: $= xs ++ ys$ Unfold

9: $\text{rev}(\text{rev } x) = x$ listinduction 1,2,3-8

10: $\text{rev}(\text{rev } x) = \text{id } x$ Fold rewrite, id 9

11: $(\text{rev} \cdot \text{rev})x = \text{id } x$ Fold rewrite, • 10

12: $\text{rev} \cdot \text{rev} = \text{id}$ ext 11