

$$h \cdot \text{foldr } f \ e = \text{foldr } f' \ e'$$
$$\Leftarrow h \ e = e' \wedge h \ (f \ x \ y) = f' \ x \ (h \ y)$$

class Monad m \Rightarrow MonadState s m where

$$\text{get} :: m \ s$$
$$\text{put} :: s \rightarrow m \ ()$$

$$\text{put } s \gg= \lambda () \rightarrow \text{put } s' = \text{put } s'$$
$$\text{put } s \gg= \lambda () \rightarrow \text{get} = \text{put } s \gg= \lambda () \rightarrow \text{return } s$$
$$\text{get} \gg= \lambda s \rightarrow \text{put } s = \text{return } ()$$
$$\text{get} \gg= \lambda s \rightarrow \text{get} \gg= \lambda s' \rightarrow \text{get} \gg= \lambda s \rightarrow k \ s \ s'$$

add :: MonadState Integer m \Rightarrow
Integer $\rightarrow m \ ()$

$$\text{add } n = \text{do } \{ m \leftarrow \text{get}; \text{put } (m+n) \}$$

addAll :: ... \Rightarrow [Integer] $\rightarrow m \ ()$

$$\text{addAll} = \text{sequence_} \cdot \text{map } \text{add}$$
$$= \text{add} \cdot \text{sum}$$