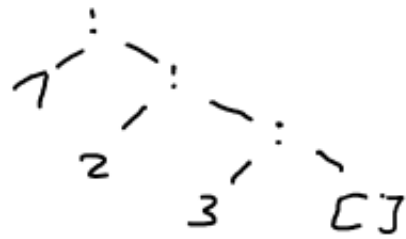
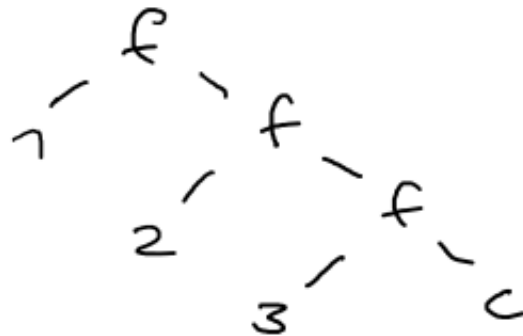


$$[1,2,3] = (1:(2:(3:[]))) = 1:2:3:[]$$



$$\text{foldr } f \text{ c } [1,2,3] =$$



$$\text{sum list} = \text{foldr } (+) \ 0 \ \text{list}$$

$$\text{and} :: [\text{Bool}] \rightarrow \text{Bool}$$

$$\text{and} = \text{foldr } (\&\&) \ \text{True}$$

$$\text{filter} :: (a \rightarrow \text{Bool}) \rightarrow [a] \rightarrow [a]$$

$$\text{filter } p = \text{foldr } \underline{\text{???}} \ []$$

$$\text{filter } p \ (x:xs)$$

$$= \begin{array}{l} \text{if } p \ x \ \text{then } x : \underline{\text{filter } p \ xs} \\ \text{else } \underline{\text{filter } p \ xs} \end{array}$$

$$\textcircled{\text{???}} = \lambda x \ \underline{ys} \rightarrow \text{if } p \ x \ \text{then } x : \underline{ys} \ \text{else } \underline{ys}$$