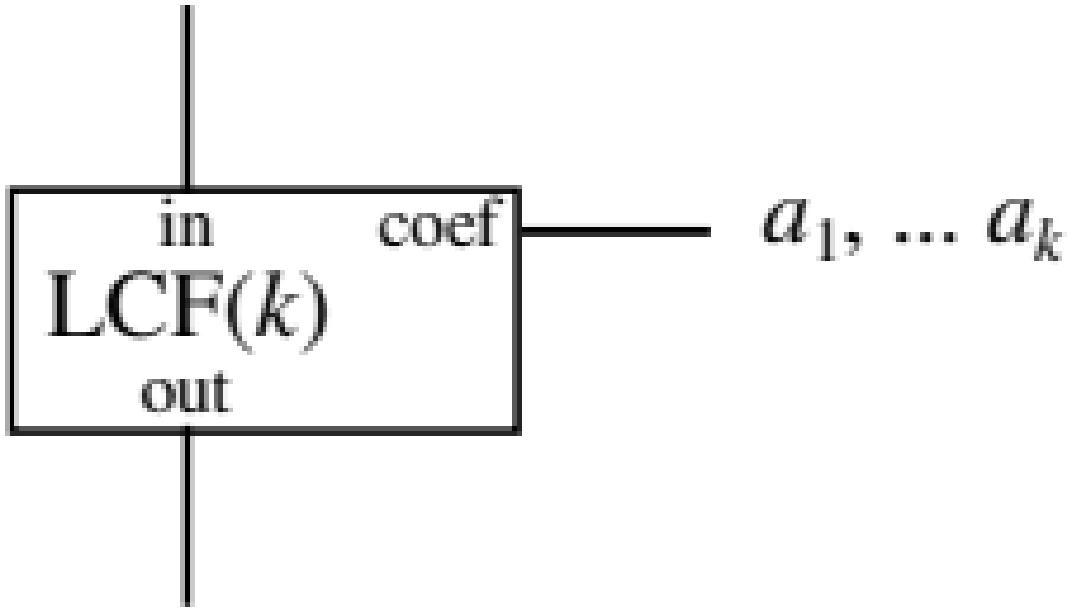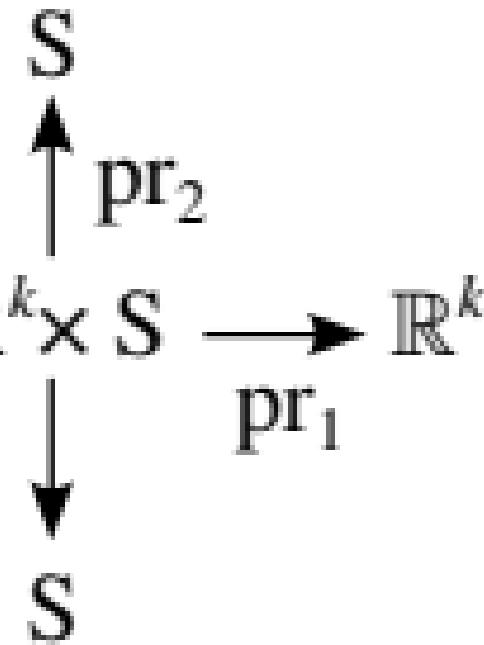$x_1, \ldots x_n$

in   coef

LCF(k)

out

$a_1, \ldots a_k$

$y_n = a_1 x_{n-1} + a_2 x_{n-2} + \ldots + a_k x_{n-k}$

(a)

$$\begin{array}{ccc} & & S \\ & & \uparrow {\scriptstyle pr_2} \\ \mathbb{R}^k \times S & \xrightarrow{pr_1} & \mathbb{R}^k \\ & \downarrow & \\ & S & \end{array}$$

(b)