1 11.1

$$\mathbb{F} \xrightarrow{} \mathbb{F}^2 \xleftarrow{\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}} \mathbb{F}^3 \xleftarrow{\begin{bmatrix} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}} \mathbb{F}^2 \xrightarrow{\begin{bmatrix} 1 & 1 \end{bmatrix}} \mathbb{F}$$

with $\mathbb{F} \xrightarrow{\begin{bmatrix} 0 \\ 1 \end{bmatrix}} \mathbb{F}^2$ and vertical arrow $\mathbb{F}^3 \xrightarrow{\begin{bmatrix} 0 & 0 & 1 \end{bmatrix}} \mathbb{F}$

2 11.2

$$\mathbb{F} \xrightarrow{\begin{bmatrix} 1 \\ 0 \end{bmatrix}} \mathbb{F}^2 \xleftarrow{\begin{bmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}} \mathbb{F}^3 \xleftarrow{\begin{bmatrix} 0 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}} \mathbb{F}^2 \xrightarrow{\begin{bmatrix} 0 & 1 \end{bmatrix}} \mathbb{F}$$

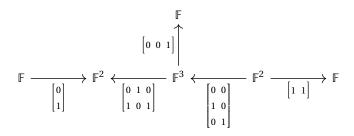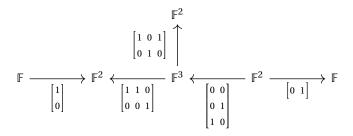vertical arrow $\mathbb{F}^3 \xrightarrow{\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}} \mathbb{F}^2$

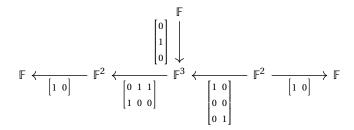# 3 20.1

$$\mathbb{F} \xleftarrow{\begin{bmatrix} 1 & 0 \end{bmatrix}} \mathbb{F}^2 \xrightarrow{\begin{bmatrix} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}} \mathbb{F}^3 \xleftarrow{\begin{bmatrix} 0 & 1 \\ 1 & 0 \\ 0 & 0 \end{bmatrix}} \mathbb{F}^2 \xleftarrow{\begin{bmatrix} 0 \\ 1 \end{bmatrix}} \mathbb{F}$$

vertical arrow $\mathbb{F}^3 \xrightarrow{\begin{bmatrix} 1 & 1 & 1 \end{bmatrix}} \mathbb{F}$

4 20.2

$$\mathbb{F} \xleftarrow{\begin{bmatrix} 1 & 1 \end{bmatrix}} \mathbb{F}^2 \xrightarrow{\begin{bmatrix} 0 & 1 \\ 1 & 0 \\ 0 & 0 \end{bmatrix}} \mathbb{F}^3 \xleftarrow{\begin{bmatrix} 0 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}} \mathbb{F}^2 \xleftarrow{\begin{bmatrix} 1 \\ 0 \end{bmatrix}} \mathbb{F}$$

vertical arrow $\mathbb{F}^3 \xrightarrow{\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}} \mathbb{F}^2$

5 31.1

$$\mathbb{F} \xleftarrow{\ \begin{bmatrix}1 & 0\end{bmatrix}\ } \mathbb{F}^2 \xleftarrow{\ \begin{bmatrix}0 & 1 & 1\\1 & 0 & 0\end{bmatrix}\ } \mathbb{F}^3 \xleftarrow{\ \begin{bmatrix}1 & 0\\0 & 0\\0 & 1\end{bmatrix}\ } \mathbb{F}^2 \xrightarrow{\ \begin{bmatrix}1 & 0\end{bmatrix}\ } \mathbb{F}$$

with $\mathbb{F} \xrightarrow{\begin{bmatrix}0\\1\\0\end{bmatrix}} \mathbb{F}^3$

6 31.2

$$\mathbb{F} \xleftarrow{\ \begin{bmatrix}1 & 1\end{bmatrix}\ } \mathbb{F}^2 \xleftarrow{\ \begin{bmatrix}0 & 1 & 0\\1 & 0 & 1\end{bmatrix}\ } \mathbb{F}^3 \xleftarrow{\ \begin{bmatrix}0 & 1\\1 & 0\\0 & 0\end{bmatrix}\ } \mathbb{F}^2 \xrightarrow{\ \begin{bmatrix}1 & 0\end{bmatrix}\ } \mathbb{F}$$

with $\mathbb{F}^2 \xrightarrow{\begin{bmatrix}0 & 0\\0 & 1\\0 & 1\end{bmatrix}} \mathbb{F}^3$