

5.1

$$\begin{array}{ccccccc}
 & & & \mathbb{F} & & & \\
 & & & \left[\begin{matrix} 0 \\ 0 \\ 1 \end{matrix} \right] & \downarrow & & \\
 \mathbb{F} & \xrightarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} & \mathbb{F}^3 & \xrightarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} \mathbb{F} \\
 & \left[\begin{matrix} 1 \\ 0 \end{matrix} \right] & & \left[\begin{matrix} 1 & 0 \\ 0 & 1 \\ 0 & 0 \end{matrix} \right] & & \left[\begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 1 \end{matrix} \right] & & \left[\begin{matrix} 1 & 1 \end{matrix} \right]
 \end{array}$$

5.2

$$\begin{array}{ccccccc}
 & & & \mathbb{F} & & & \\
 & & & \left[\begin{matrix} 1 & 0 \\ 0 & 0 \\ 0 & 1 \end{matrix} \right] & \downarrow & & \\
 \mathbb{F} & \xrightarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} & \mathbb{F}^3 & \xrightarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} \mathbb{F} \\
 & \left[\begin{matrix} 0 \\ 1 \end{matrix} \right] & & \left[\begin{matrix} 1 & 0 \\ 0 & 1 \\ 0 & 0 \end{matrix} \right] & & \left[\begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 1 \end{matrix} \right] & & \left[\begin{matrix} 1 & 1 \end{matrix} \right]
 \end{array}$$

11.1

$$\begin{array}{ccccccc}
 & & & \mathbb{F} & & & \\
 & & & \left[\begin{matrix} 0 & 0 & 1 \end{matrix} \right] & \uparrow & & \\
 \mathbb{F} & \xrightarrow{\quad} & \mathbb{F}^2 & \xleftarrow{\quad} & \mathbb{F}^3 & \xleftarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} \mathbb{F} \\
 & \left[\begin{matrix} 0 \\ 1 \end{matrix} \right] & & \left[\begin{matrix} 0 & 1 & 0 \\ 1 & 0 & 1 \end{matrix} \right] & & \left[\begin{matrix} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{matrix} \right] & & \left[\begin{matrix} 1 & 1 \end{matrix} \right]
 \end{array}$$

11.2

$$\begin{array}{ccccccc}
 & & & \mathbb{F}^2 & & & \\
 & & & \left[\begin{matrix} 0 & 0 & 1 \\ 1 & 1 & 0 \end{matrix} \right] & \uparrow & & \\
 \mathbb{F} & \xrightarrow{\quad} & \mathbb{F}^2 & \xleftarrow{\quad} & \mathbb{F}^3 & \xleftarrow{\quad} & \mathbb{F}^2 & \xrightarrow{\quad} \mathbb{F} \\
 & \left[\begin{matrix} 0 \\ 1 \end{matrix} \right] & & \left[\begin{matrix} 0 & 1 & 0 \\ 1 & 0 & 1 \end{matrix} \right] & & \left[\begin{matrix} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{matrix} \right] & & \left[\begin{matrix} 0 & 1 \end{matrix} \right]
 \end{array}$$

20.1

$$\begin{array}{ccccc}
 & & \mathbb{F} & & \\
 & & \uparrow & & \\
 & & \left[\begin{array}{ccc} 1 & 1 & 1 \end{array} \right] & & \\
 \mathbb{F} & \xleftarrow{\left[\begin{array}{cc} 1 & 0 \end{array} \right]} & \mathbb{F}^2 & \xrightarrow{\left[\begin{array}{cc} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{array} \right]} & \mathbb{F}^3 \xleftarrow{\left[\begin{array}{cc} 0 & 1 \\ 1 & 0 \\ 0 & 0 \end{array} \right]} \mathbb{F}^2 \xleftarrow{\left[\begin{array}{c} 0 \\ 1 \end{array} \right]} \mathbb{F}
 \end{array}$$

20.2

$$\begin{array}{ccccc}
 & & \mathbb{F}^2 & & \\
 & & \uparrow & & \\
 & & \left[\begin{array}{ccc} 0 & 1 & 0 \\ 1 & 0 & 1 \end{array} \right] & & \\
 \mathbb{F} & \xleftarrow{\left[\begin{array}{cc} 1 & 1 \end{array} \right]} & \mathbb{F}^2 & \xrightarrow{\left[\begin{array}{cc} 0 & 1 \\ 1 & 0 \\ 0 & 0 \end{array} \right]} & \mathbb{F}^3 \xleftarrow{\left[\begin{array}{cc} 0 & 0 \\ 0 & 1 \\ 1 & 0 \end{array} \right]} \mathbb{F}^2 \xleftarrow{\left[\begin{array}{c} 1 \\ 0 \end{array} \right]} \mathbb{F}
 \end{array}$$

31.1

$$\begin{array}{ccccc}
 & & \mathbb{F} & & \\
 & & \downarrow & & \\
 & & \left[\begin{array}{c} 0 \\ 1 \\ 0 \end{array} \right] & & \\
 \mathbb{F} & \xleftarrow{\left[\begin{array}{cc} 1 & 0 \end{array} \right]} & \mathbb{F}^2 & \xleftarrow{\left[\begin{array}{ccc} 0 & 1 & 1 \\ 1 & 0 & 0 \end{array} \right]} & \mathbb{F}^3 \xleftarrow{\left[\begin{array}{cc} 1 & 0 \\ 0 & 0 \\ 0 & 1 \end{array} \right]} \mathbb{F}^2 \xrightarrow{\left[\begin{array}{cc} 1 & 1 \end{array} \right]} \mathbb{F}
 \end{array}$$

31.2

$$\begin{array}{ccccc}
 & & \mathbb{F}^2 & & \\
 & & \downarrow & & \\
 & & \left[\begin{array}{c} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{array} \right] & & \\
 \mathbb{F} & \xleftarrow{\left[\begin{array}{cc} 1 & 1 \end{array} \right]} & \mathbb{F}^2 & \xleftarrow{\left[\begin{array}{ccc} 0 & 1 & 0 \\ 1 & 0 & 1 \end{array} \right]} & \mathbb{F}^3 \xleftarrow{\left[\begin{array}{cc} 0 & 1 \\ 1 & 0 \\ 0 & 0 \end{array} \right]} \mathbb{F}^2 \xrightarrow{\left[\begin{array}{cc} 1 & 0 \end{array} \right]} \mathbb{F}
 \end{array}$$