$$y_{k}^{\text{even}} \longrightarrow y_{k}^{\text{even}} + \omega_{n}^{k} y_{k}^{\text{odd}} \qquad y_{k}^{\text{even}} \longrightarrow y_{k}^{\text{even}} + \omega_{n}^{k} y_{k}^{\text{odd}}$$

$$\omega_{n}^{k} \longrightarrow y_{k}^{\text{even}} - \omega_{n}^{k} y_{k}^{\text{odd}} \qquad y_{k}^{\text{odd}} \longrightarrow y_{k}^{\text{even}} - \omega_{n}^{k} y_{k}^{\text{odd}}$$
(a)
(b)