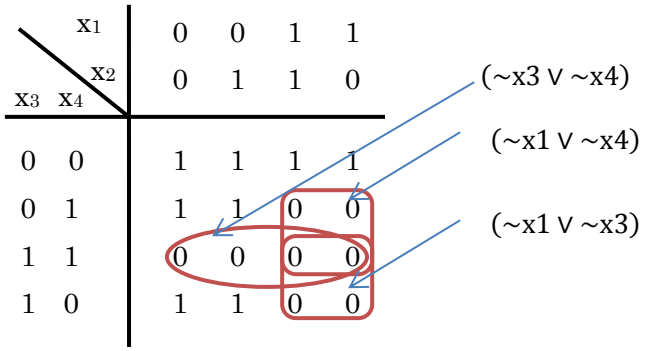
問 8

カルノー図において"0"の部分に注目して括ると下図のようになる。



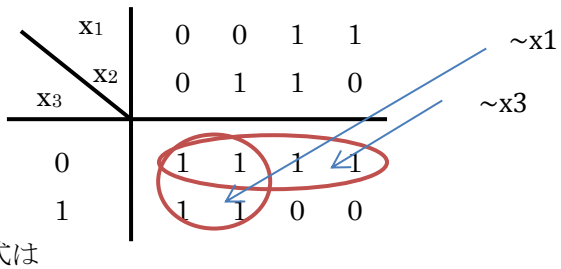
従って論理式は

$$f = (\sim x1 \vee \sim x3)(\sim x1 \vee \sim x4)(\sim x3 \vee \sim x4)$$

問 9

$$f = (\sim x1 \vee \sim x3)(\sim x1 \vee \sim x4)(\sim x3 \vee \sim x4)$$
$$= (\sim x1 \vee \sim x1\sim x4 \vee \sim x1\sim x3 \vee \sim x3\sim x4)(\sim x3 \vee \sim x4)$$
$$= (\sim x1 \vee \sim x3\sim x4)(\sim x3 \vee \sim x4)$$
$$= \sim x1\sim x3 \vee \sim x1\sim x4 \vee \sim x3\sim x4$$

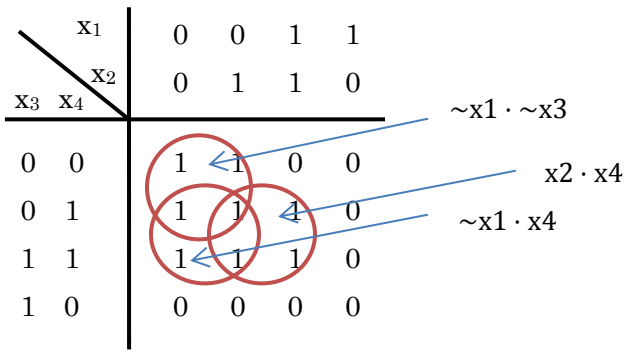
問 14



従って論理式は

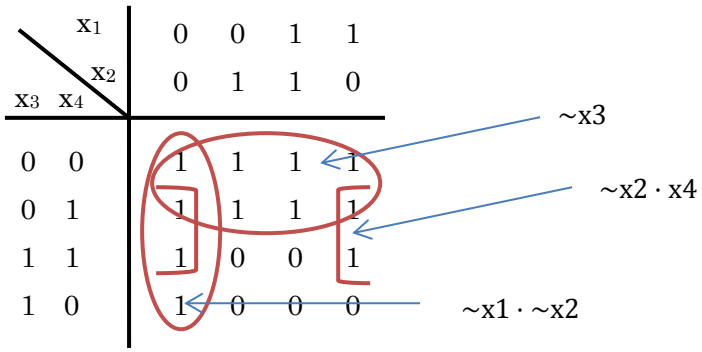
$$f = \sim x1 \vee \sim x3$$

問 15



従って論理式は　$f = \sim x1\sim x3 \vee \sim x1x4 \vee x2x4$

問 16



従って論理式は

$$f = \sim x3 \vee \sim x1x2 \vee \sim x2x4$$

問 17

$$\begin{aligned} f &= \sim x1\sim x3 \vee x2\sim x3 \vee x1\sim x3 \vee \sim x1\sim x2 \vee \sim x1x2x3 \\ &= \sim x3(\sim x1 \vee x2 \vee x1) \vee \sim x1(\sim x2 \vee \sim x3 \vee x2x3) \\ &= \sim x3(1 \vee x2) \vee \sim x1(\sim(x2x3) \vee x2x3) \\ &= \sim x3 \vee \sim x1 \end{aligned}$$