

Minimization

Please do the following exercises individually.

Karnaugh Maps

Please try to make your own nonstandard Karnaugh maps for two, three and four propositional variables without using your notes.

Karnaugh Maps

Please make standard Karnaugh maps for the follow disjunctive normal forms.

$$\varphi(a,b,c) = (a \wedge \neg b \wedge c) \vee (\neg a \wedge \neg b \wedge c) \vee (a \wedge b \wedge c) \vee (\neg a \wedge b \wedge c)$$

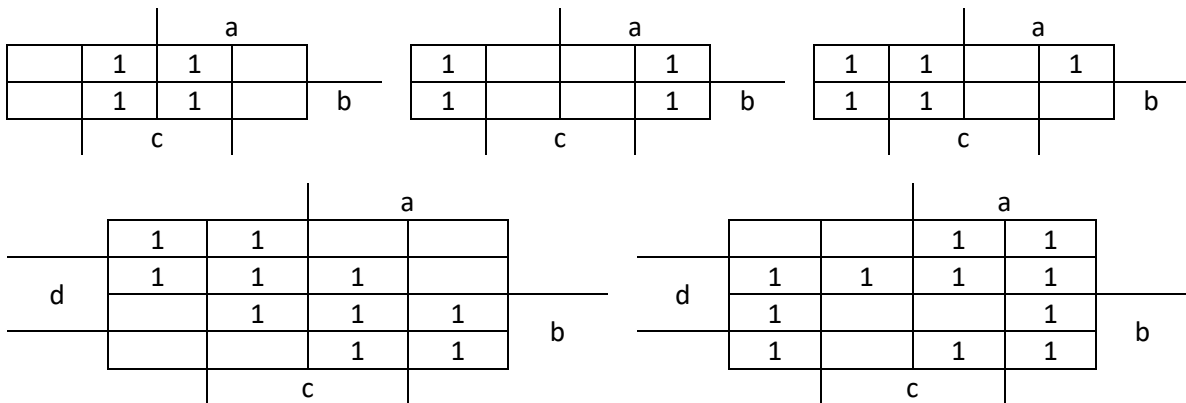
$$\psi(a,b,c) = (\neg a \wedge \neg b \wedge \neg c) \vee (a \wedge b \wedge \neg c) \vee (\neg a \wedge \neg b \wedge c) \vee (a \wedge \neg b \wedge c) \vee (a \wedge \neg b \wedge \neg c)$$

$$\chi(a,b,c,d) = (a \wedge b \wedge c \wedge d) \vee (\neg a \wedge \neg b \wedge c \wedge d) \vee (a \wedge \neg b \wedge c \wedge d) \vee (\neg a \wedge b \wedge c \wedge d)$$

$$\xi(a,b,c,d) = (\neg a \wedge \neg b \wedge \neg c \wedge \neg d) \vee (\neg a \wedge \neg b \wedge c \wedge d) \vee (a \wedge b \wedge c \wedge d) \vee (a \wedge b \wedge \neg c \wedge \neg d) \vee (a \wedge \neg b \wedge \neg c \wedge \neg d) \vee (\neg a \wedge b \wedge \neg c \wedge \neg d)$$

Minimization

Please minimize the following Karnaugh maps.



Minimization

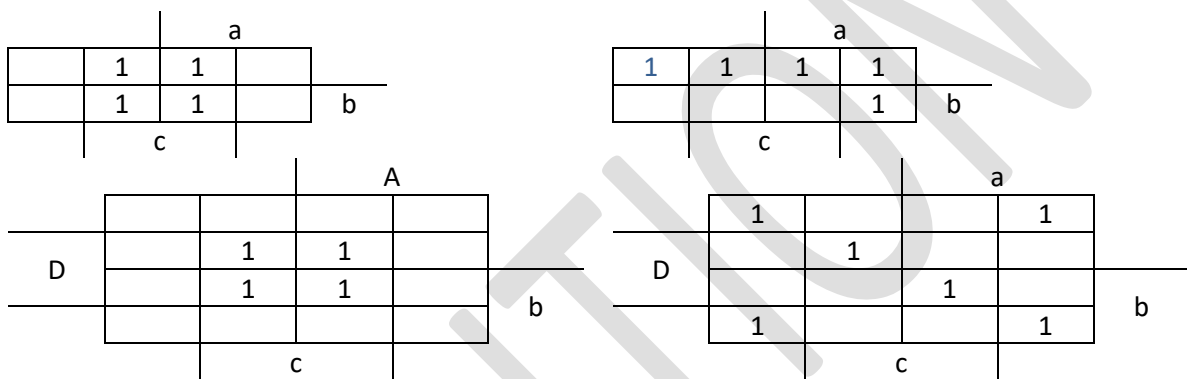
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Karnaugh Maps

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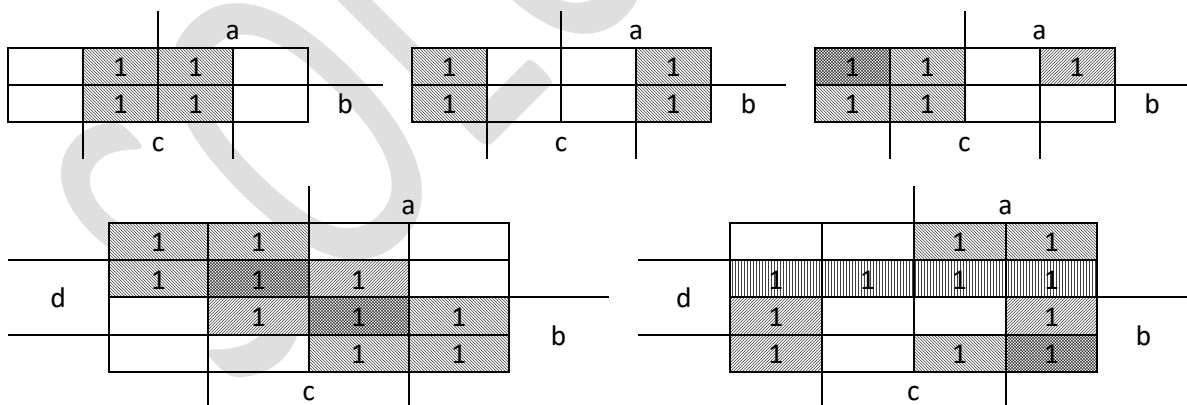
Karnaugh Maps

Please make standard Karnaugh maps for the follow disjunctive normal forms.



Minimization

Please minimize the following Karnaugh maps.



$$\varphi(a,b,c) = c$$

$$\xi(a,b,c,d) = (\neg a \wedge \neg b) \vee (c \wedge d) \vee (a \wedge b)$$

$$\chi(ab,c) = \neg c$$

$$\zeta(a,b,c,d) = (a \wedge \neg d) \vee (\neg b \wedge d) \vee (b \wedge \neg c)$$

$$\psi(a,b,c) = \neg a \vee (\neg b \wedge \neg c)$$