

CL1: Exercises

Due Sep 11 at 11:59pm	Points 10	Questions 6	Available until Dec 14 at 11:59pm
Time Limit None	Allowed Attempts Unlimited		

This quiz was locked Dec 14 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	11,550 minutes	10 out of 10

❗ Correct answers are hidden.

Score for this attempt: **10** out of 10

Submitted Sep 16 at 1:27pm

This attempt took 11,550 minutes.

Before starting this exercise set, note that in Boolean algebra, putting an apostrophe next to something is notationally equivalent to putting a horizontal bar above that thing. This quiz/exercise set will use apostrophes instead of horizontal bars. Below are some examples of things that are notationally equivalent.

$$A' = \overline{A}$$

$$(AB)' = \overline{AB}$$

$$A'B' = \overline{A} \overline{B}$$

Note that in the last example, the expression is "not A and not B", whereas in the middle example, the expression is "not (A and B)".

For the next three questions, refer to the following truth table. It has three input variables, A, B, and C, and an output variable, O.

A	B	C	O
0	0	0	1

0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

Question 1

1 / 1 pts

Which of the following are the minterms with a value of 1 for the truth table?

☒ A'B'C'

☒ A'B'C

☐ A'BC'☒ A'BC☐ AB'C'☒ AB'C☒ ABC'☐ ABC**Question 2****2 / 2 pts**

Fill in the K-map below with the correct values. The values should be a lowercase x (for a "don't care" condition), 0, or 1.

--	--	--	--	--	--	--	--

		AB			
		00	01	11	10
C	0	1	0	1	0
	1	1	1	0	1

Answer 1:

1

Answer 2:

0

Answer 3:

1

Answer 4:

0

Answer 5:

1

Answer 6:

1

Answer 7:

0

Answer 8:

1

Question 3**2 / 2 pts**

Which of the following terms appear in the final minimized expression?

☒ $A'B'$ ☐ AB ☐ $A'C'$ ☒ $A'C$ ☐ AC' ☐ AC ☒ $B'C$ ☐ BC' ☐ BC ☐ $A'B'C$ ☐ $A'BC$

☐ $AB'C'$ ☐ $AB'C$ ☒ ABC'

For the next three questions, refer to the following truth table. It has four input variables, A, B, C, and D, and an output variable, O.

A	B	C	D	O
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	1

0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	0

Question 4

1 / 1 pts

Which of the following are the minterms with a value of 1 for the truth table?

☐ $A'B'C'D'$

☐ $A'B'C'D$

☒ $A'B'CD'$

☒ $A'B'CD$ ☐ $A'BC'D'$ ☐ $A'BC'D$ ☒ $A'BCD'$ ☒ $A'BCD$ ☒ $AB'C'D'$ ☐ $AB'C'D$ ☒ $AB'CD'$ ☐ $AB'CD$ ☐ $ABC'D'$ ☐ $ABC'D$

☐ ABCD'

☐ ABCD

Question 5

2 / 2 pts

Fill in the K-map below with the correct values. The values should be a lowercase x (for a "don't care" condition), 0, or 1.

		AB			
		00	01	11	10
CD	00	0	0	0	1
	01	0	0	x	0
	11				

		1	1	x	0
	10	1	1	x	1

Answer 1:

0

Answer 2:

0

Answer 3:

0

Answer 4:

1

Answer 5:

0

Answer 6:

0

Answer 7:

x

Answer 8:

0

Answer 9:

1

Answer 10:

1

Answer 11:

x

Answer 12:

0

Answer 13:

1

Answer 14:

1

Answer 15:

x

Answer 16:

1

Question 6

2 / 2 pts

Which of the following terms appear in the final minimized expression?

☒ A'C☐ AC☐ A'D'☐ B'C☐ BC'☐ B'D'☐ C'D'☐ C'D☐ CD'☐ BC'D'☐ A'BC

☐ ABC☒ AB'D'☐ A'C'D'☐ A'CD'☐ ACD'

Quiz Score: **10** out of 10