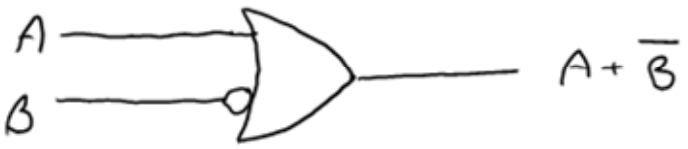
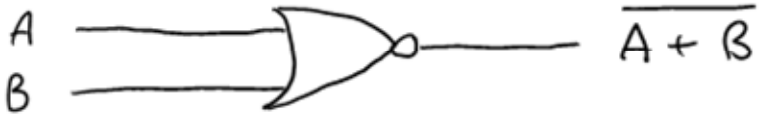
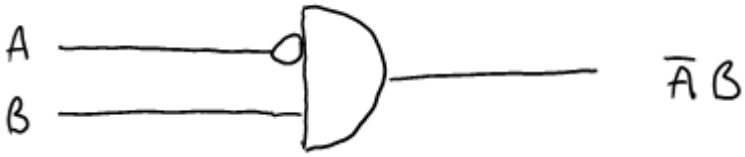
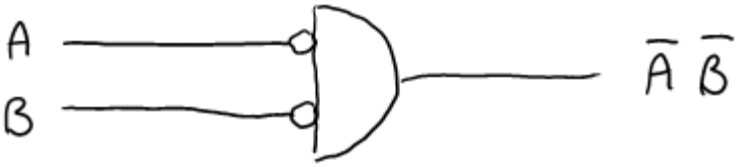
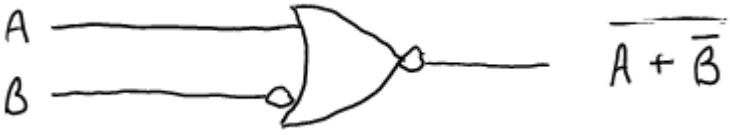
Section 1.8 Answers

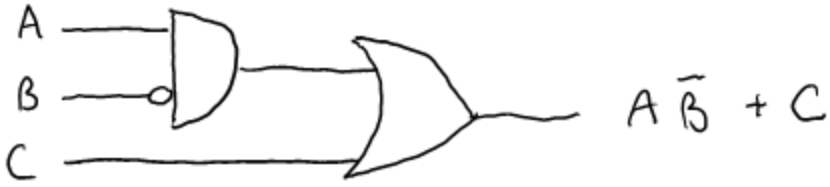
1. 

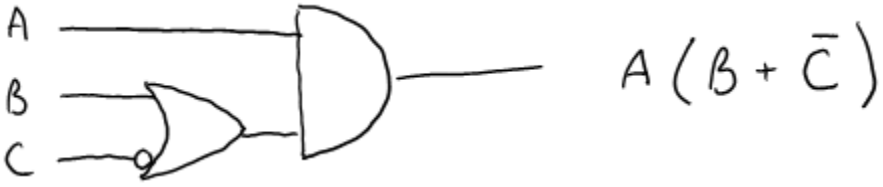
2. 

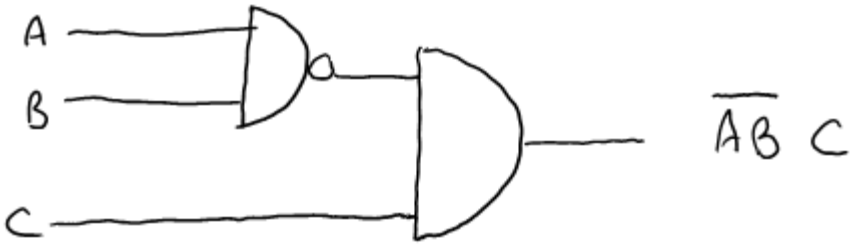
3. 

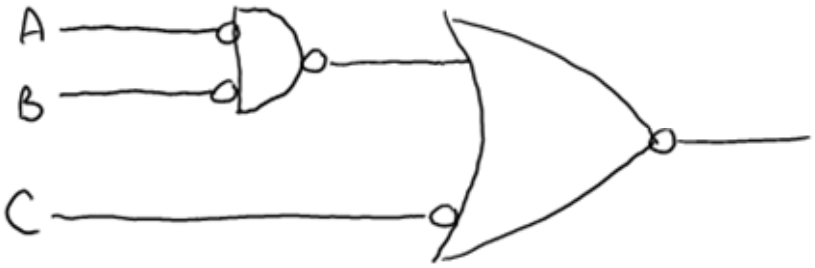
4. 

5. 

6. 

7. 

8. 

9. 

10. $\overline{A}\overline{B}$

11. $\overline{\overline{A}+B}$

12. $\overline{\overline{A}+\overline{B}}$

13. $\overline{AB}$

14. $(A+B)\cdot C$

15. $A+\overline{\overline{B}C}$

16. $\overline{A+\overline{B+C}}$

17. $\overline{\overline{A}\overline{B}}\,\overline{C}$

18

A	$\bar{A}$	$A\bar{A}$
0	1	0
1	0	0

19

A	1	$A+1$
0	1	1
1	1	1

20

A	B	$\bar{B}$	$A\bar{B}$
0	0	1	0
0	1	0	0
1	0	1	1
1	1	0	0

21

A	B	$A+B$	$\overline{A+B}$
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

22

A	B	$\bar{A}$	$\bar{A}B$	$A+\bar{A}B$
0	0	1	0	0
0	1	1	1	1
1	0	0	0	1
1	1	0	0	1

23

A	B	C	A+B	(A+B)C
0	0	0	0	0
0	0	1	0	0
0	1	0	1	0
0	1	1	1	1
1	0	0	1	0
1	0	1	1	1
1	1	0	1	0
1	1	1	1	1

24

A	B	C	$\bar{C}$	A+B	A+B+$\bar{C}$
0	0	0	1	0	1
0	0	1	0	0	0
0	1	0	1	1	1
0	1	1	0	1	1
1	0	0	1	1	1
1	0	1	0	1	1
1	1	0	1	1	1
1	1	1	0	1	1

25 No

A	B	AB	$\overline{AB}$	$\bar{A}$. $\bar{B}$	$\bar{A}\bar{B}$
0	0	0	1	1	1
0	1	0	1	1	0
1	0	0	1	0	0
1	1	1	0	0	0

not identical

26 Yes

A	B	A+B	$\overline{A+B}$	$\bar{A}$	$\bar{B}$	$\bar{A}.\bar{B}$
0	0	0	1	1	1	1
0	1	1	0	1	0	0
1	0	1	0	0	1	0
1	1	1	0	0	0	0

identical

27 No

A	B	C	BC	A+BC	A+B	(A+B)C
0	0	0	0	0	0	0
0	0	1	0	0	0	0
0	1	0	0	0	1	0
0	1	1	1	1	1	1
1	0	0	0	1	1	0
1	0	1	0	1	1	1
1	1	0	0	1	1	0
1	1	1	1	1	1	1

not identical

28 Yes

A	B	AB	A + AB
0	0	0	0
0	1	0	0
1	0	0	1
1	1	1	1

identical

29 Yes

A	B	C	A+B	(A+B)+C	(B+C)	A+(B+C)
0	0	0	0	0	0	0
0	0	1	0	1	1	1
0	1	0	1	1	1	1
0	1	1	1	1	1	1
1	0	0	1	1	0	1
1	0	1	1	1	1	1
1	1	0	1	1	1	1
1	1	1	1	1	1	1

identical

30

A	A	AA
0	0	0
1	1	1

AA is equivalent to A

31

A	A	A+A
0	0	0
1	1	1

A+A is equivalent to A

32

A	0	A+0
0	0	0
1	0	1

A+0 is equivalent to A

33

A	B	AB	A+AB
0	0	0	0
0	1	0	0
1	0	0	1
1	1	1	1

identical

A + AB is equivalent to A

34

A	B	$\bar{A}$	$\bar{A}+B$	$A(\bar{A}+B)$
0	0	1	1	0
0	1	1	1	0
1	0	0	0	0
1	1	0	1	1

Same as AB

$A(\bar{A}+B)$ is equivalent to AB