

Can't Get No Boolean Satisfaction

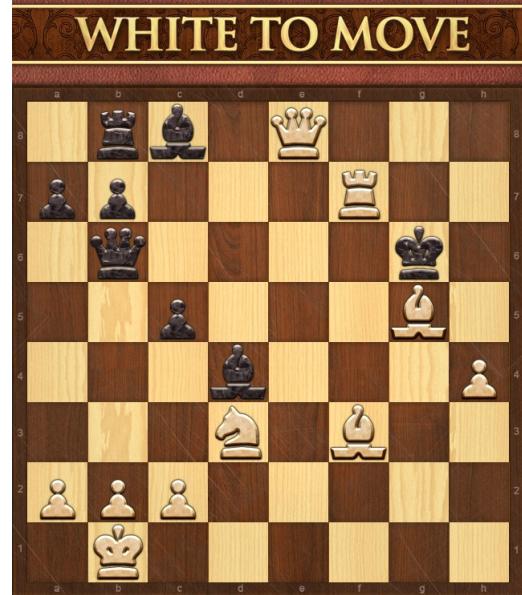
You walk into the math lounge and immediately see strange expressions scribbled on the wall. Around the lounge there are 8 numbered chess tables. In front of all the tables is written:

“Follow where the piece falls. The light is One, the dark is None.”

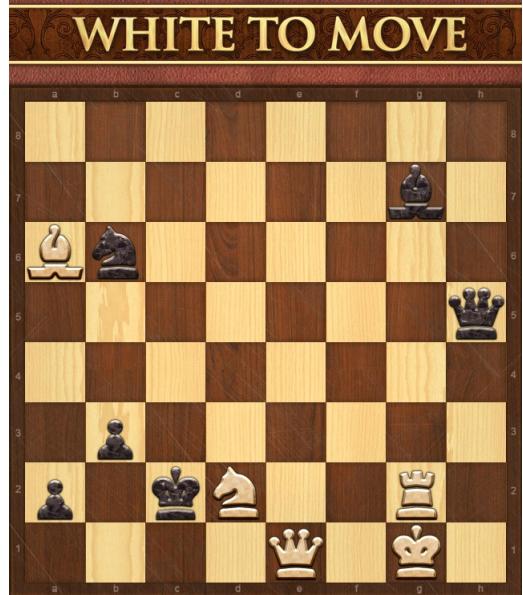
$\vee = \text{OR}$, $\wedge = \text{AND}$, $\oplus = \text{XOR}$, $\bar{x} = \text{NOT } x$

1. $a \vee \overline{(b \wedge c)} \vee d = A1; (A1, ?, 1, 0)$
2. $(a \wedge b) \wedge (c \oplus d) = A2; (1, A2, ?, 1)$
3. $\overline{(a \oplus b) \wedge (c \oplus d)} = A3; (A3, 1, 1, ?)$
4. $(a \vee b) \oplus (\bar{c} \wedge d) = A4; (0, 0, ?, A4)$
5. $(a \oplus b) \wedge (c \vee \bar{d}) = A5; (0, 1, ?, A5)$
6. $(a \vee b \wedge \bar{c}) \oplus d = A6; (0, A6, ?, 0)$
7. $(a \vee b) \wedge (c \oplus \bar{d}) = A7; (A7, 1, ?, 0)$
8. $(a \oplus b \oplus c \oplus d) = A8; (A8, 0, ?, 0)$

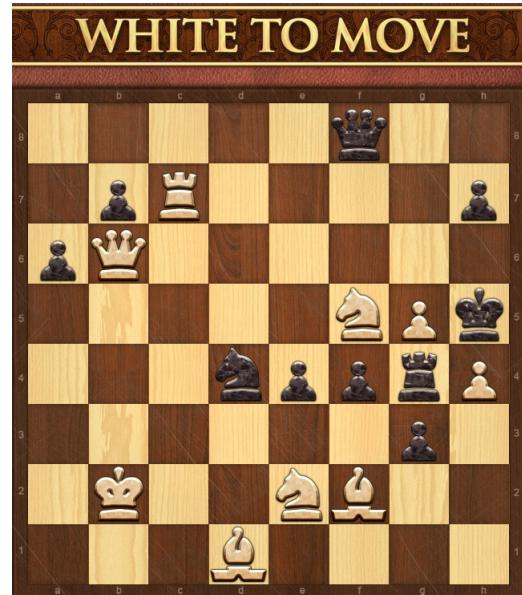
A1)



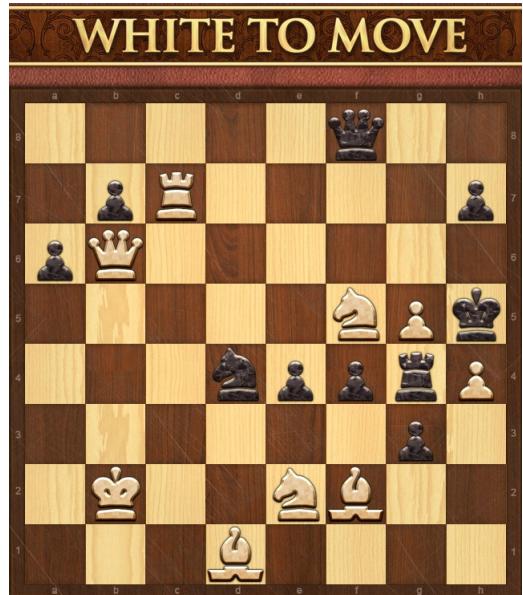
A2)



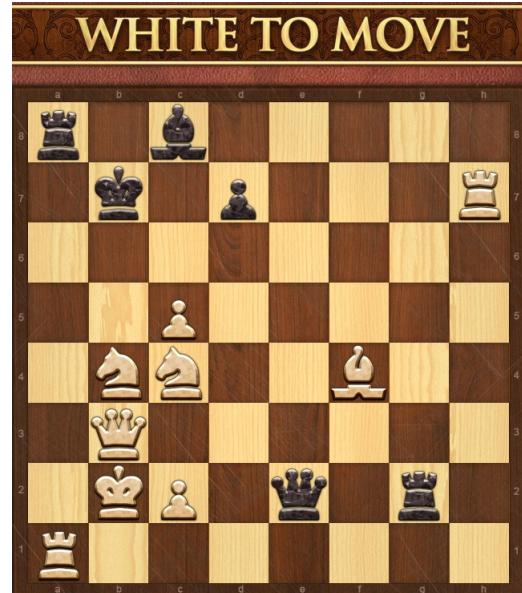
A3)



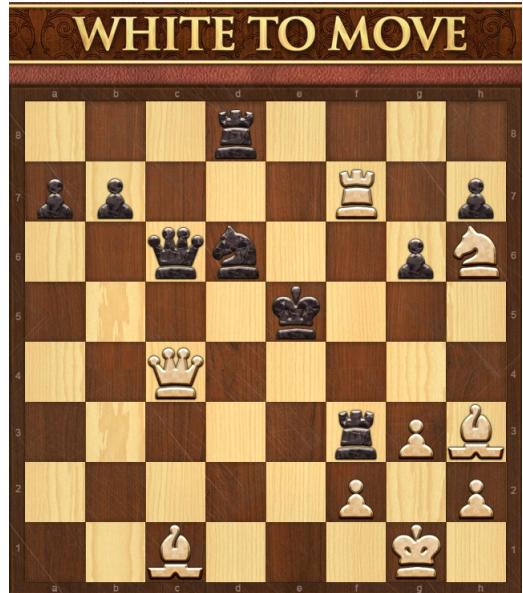
A4)



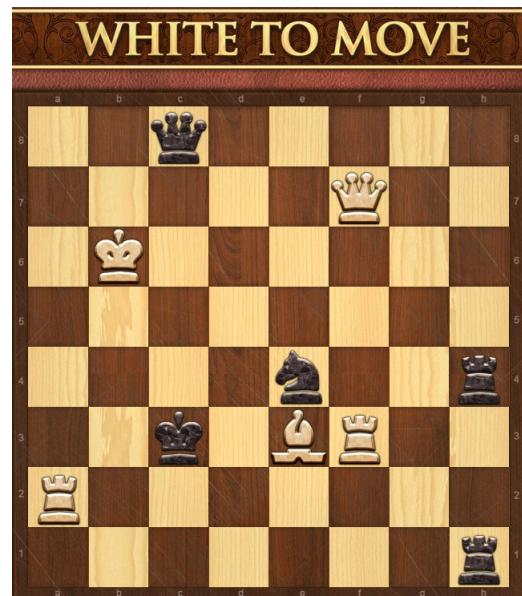
A5)



A6)



A7)



A8)

