1. For the above Hex position, list all pairs $x, y$, both empty, such that White-coloring $x$ kills $y$.

$x -- y -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --$

2. For the above Hex position, match (by drawing a line) each cell set with the reason that the set can be ignored when searching for a winning Black move. Also, fill in the blanks.

\{a1\}

mustplay from White move to ______

\{a1, b1\}

captured by Black move to ______

\{b3, c3, b4, c4\}

captured by Black move to ______

\{a1, b1, b3, c3, b4, c4\}

died by White move to ______

3. At left, put a dot in each cell that is a winning Black move. At right, do the same for White.

Below, for any one of your Black winning moves, prove that Black wins. If you want, use these diagrams.