For each of the languages below, give a context-free grammar that will generate it.

1. $L_1 = \{a^n b^m c^k \mid n + m = k\}$
2. $L_2 = \{a^n b^m c^k \mid n + k = m\}$
3. $L_3 = \{a^n b^m \mid m \leq n \leq 2m\}$
4. $L_4 = \{w_1 c w_2 \mid w_1, w_2 \in \{a, b\}^*, \text{length}(w_1) = \text{length}(w_2)\}$
5. $L_5 = \{w_1 c a^n b^m a^i b^j w_2 \mid w_1, w_2 \in \{a, b\}^*, \text{length}(w_1) = \text{length}(w_2) \mid j = 2i, n \leq m\}$
6. $L_6 = \{a^n b^m c^k \mid n \neq m \text{ or } m \neq k\}$

7. $L_7$ is the complement of language denoted by $a^* b^* c^*$. Here the alphabet set, $\Sigma = \{a, b, c\}$.
8. $L_8 = L_6 \cup L_7$. What is the complement of $L_8$?