1. 1.7.5.(d)

   In the set: ϵ, aa, $abab$

   Not in the set: a, $abba$

2. Question 2

   (a) $(a \cup b)^*$

   (b) $(a \cup b)^*$

3. Question 3

   Define $E := a \cup b$, $F := c^* E c^*$, $G := \emptyset^* \cup F \cup FF$, G is the answer.

   $\emptyset^* \cup c^*(a \cup b)c^* \cup c^*(a \cup b)c^*(a \cup b)c^*$