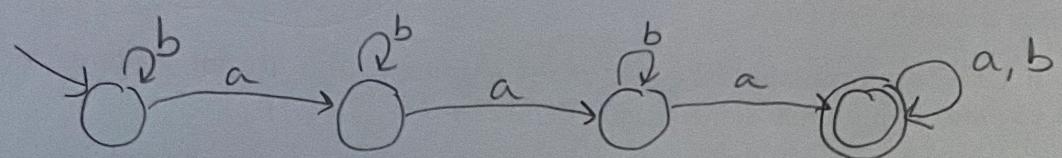
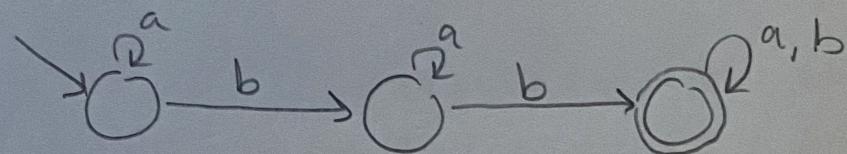


Hwk 2

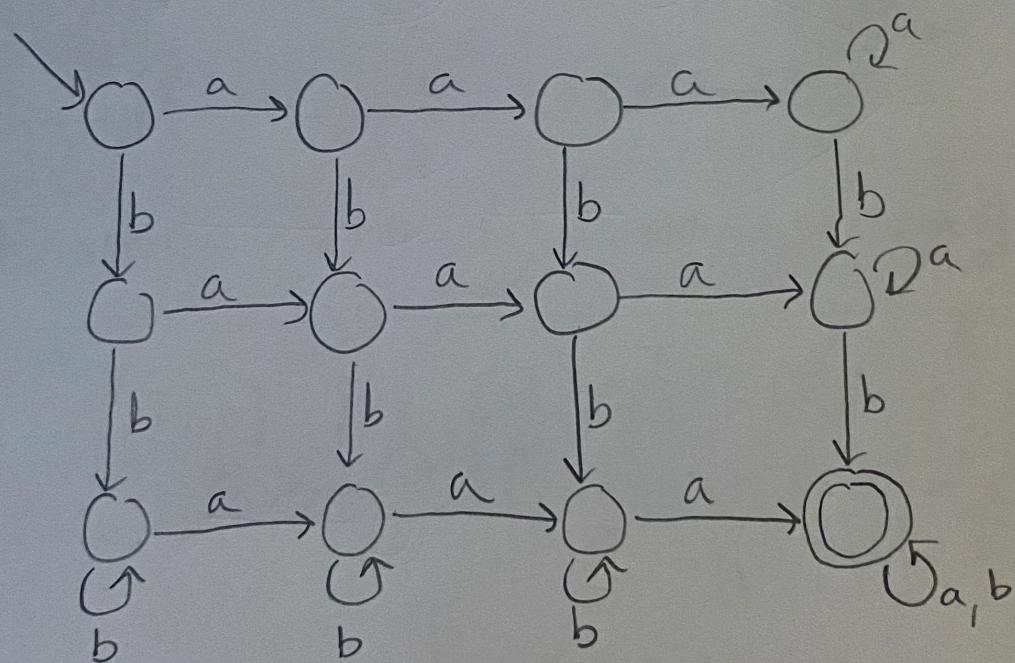
1. a) $L(M_1) = \{w \mid w \text{ has at least 3 a's}\}$



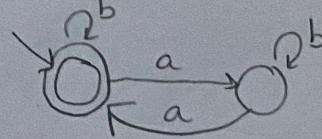
$L(M_2) = \{w \mid w \text{ has at least 2 b's}\}$



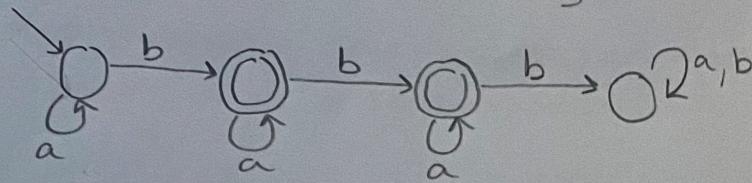
$L(M_1) \times L(M_2) = L(M)$



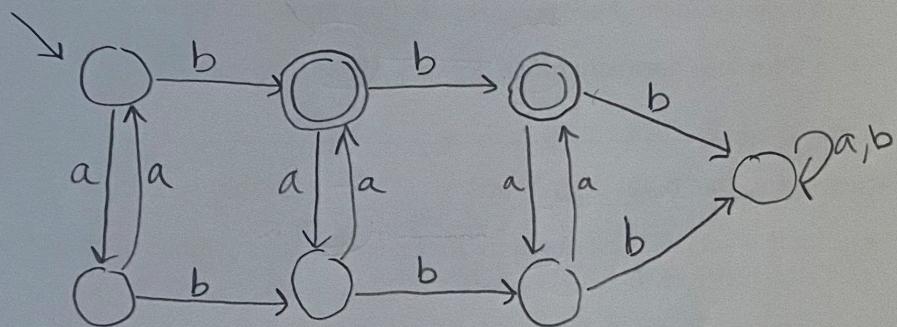
b) $L(M_1) = \{w \mid w \text{ has an even } \# \text{ of } a's\}$



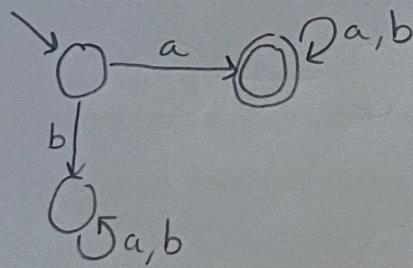
$L(M_2) = \{w \mid w \text{ has 1 or 2 } b's\}$



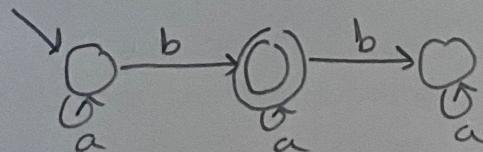
$$L(M_1) \times L(M_2) = L(M)$$



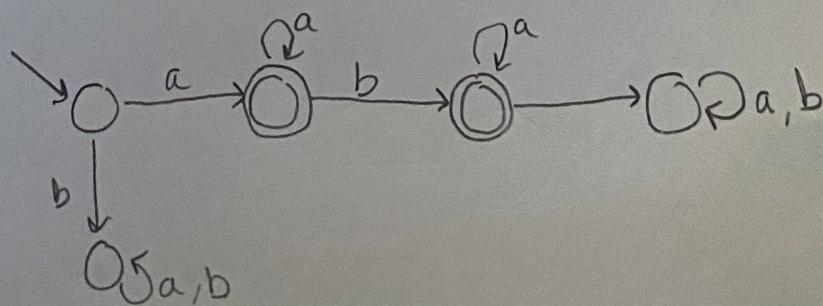
c) $L(M_1) = \{w \mid w \text{ starts with an } a\}$



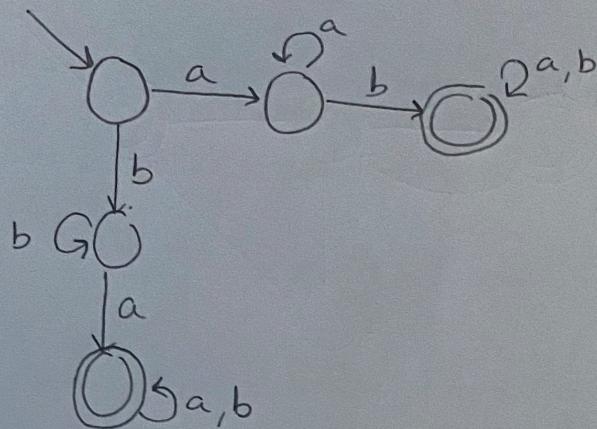
$L(M_2) = \{w \mid w \text{ has at most 1 } b\}$



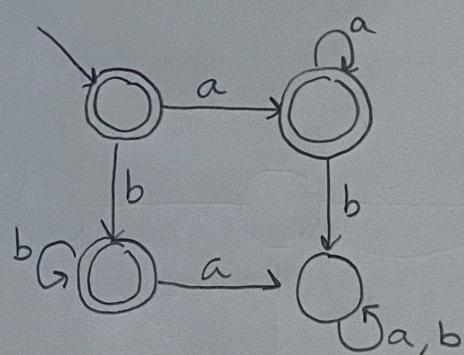
$$L(M_1) \times L(M_2) = L(M)$$



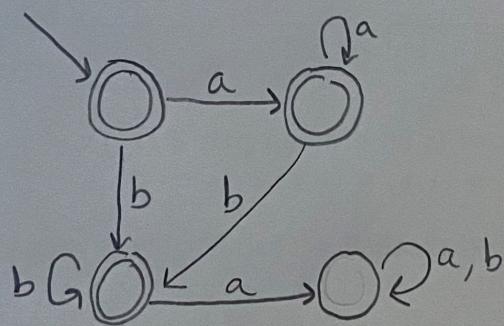
2. a) $\overline{L(M)} = \{w \mid w \text{ contains } ab \text{ or } ba \text{ (substring)}\}$



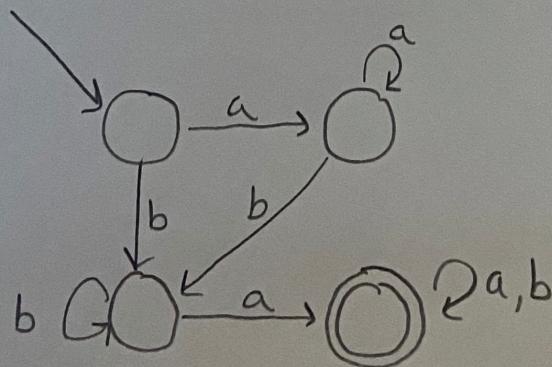
$\therefore L(M) =$



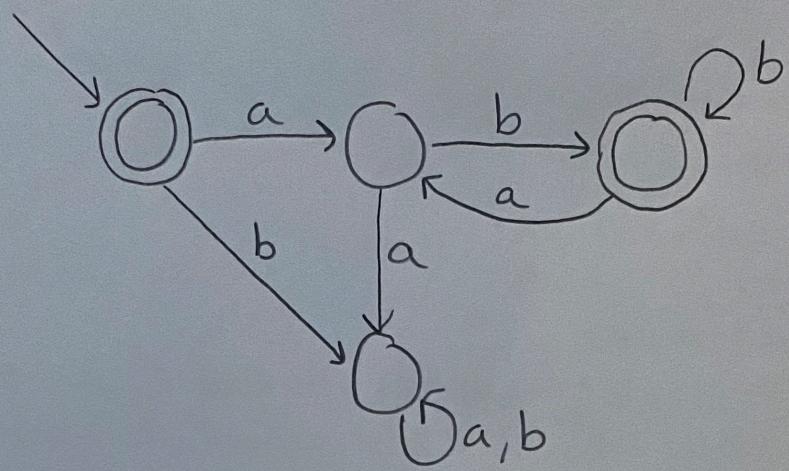
b) $\overline{L(M)} = \{w \mid w \text{ is any string in } a^*b^*\}$



$\therefore L(M) =$



c) $\overline{L}(M) = \{w \mid w \text{ is any string in } (ab^+)^*\}$



$\therefore L(M) =$

