

Формування регулярного виразу для заданого скінченного автомату.

**Приклад:**

Розглянемо мову, яка розпізнається скінченним автоматом

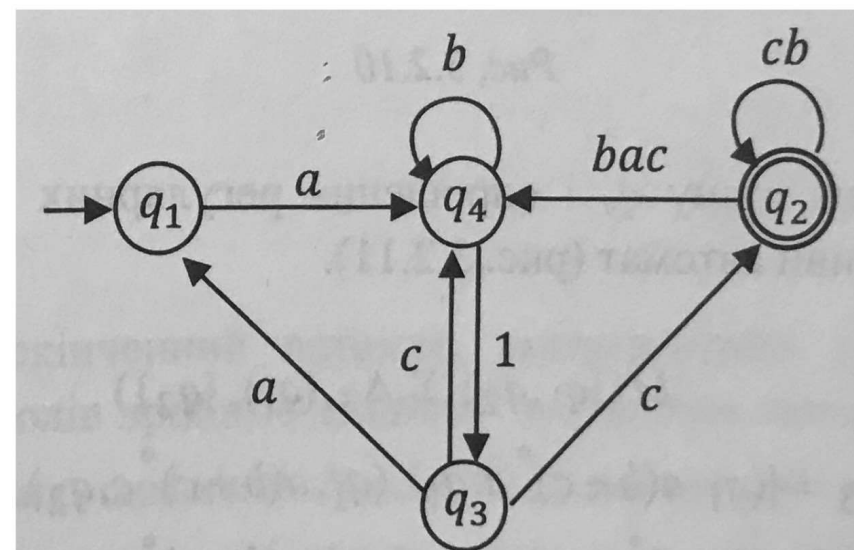
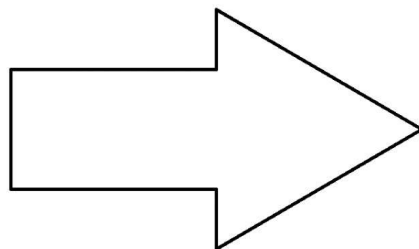
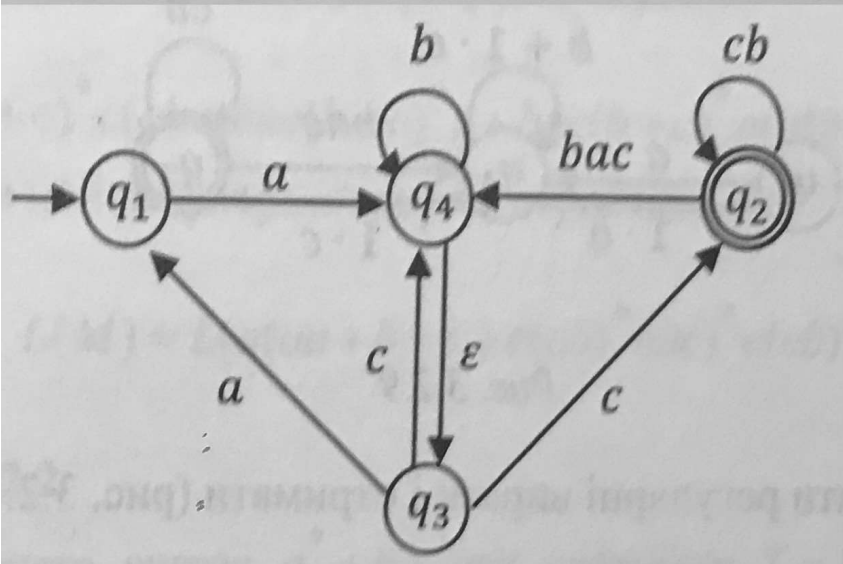
$$M(\{q_1, q_2, q_3, q_4\}, \Sigma, \Delta, \{q_1\}, \{q_2\}),$$

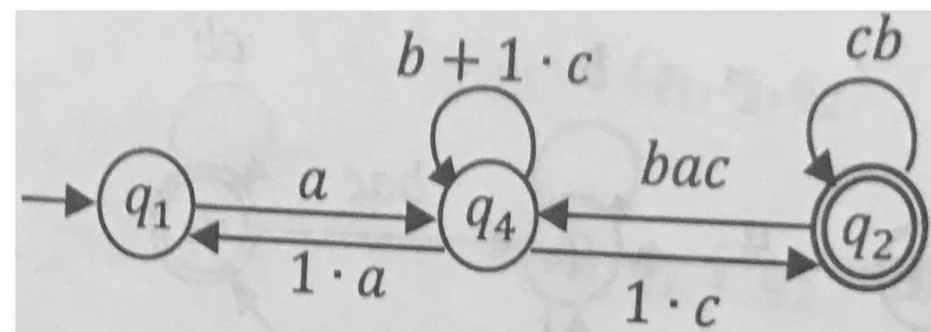
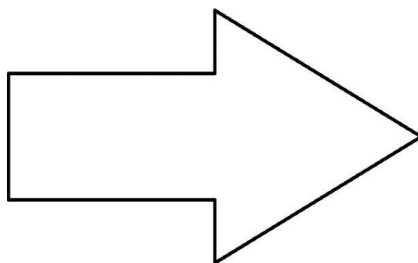
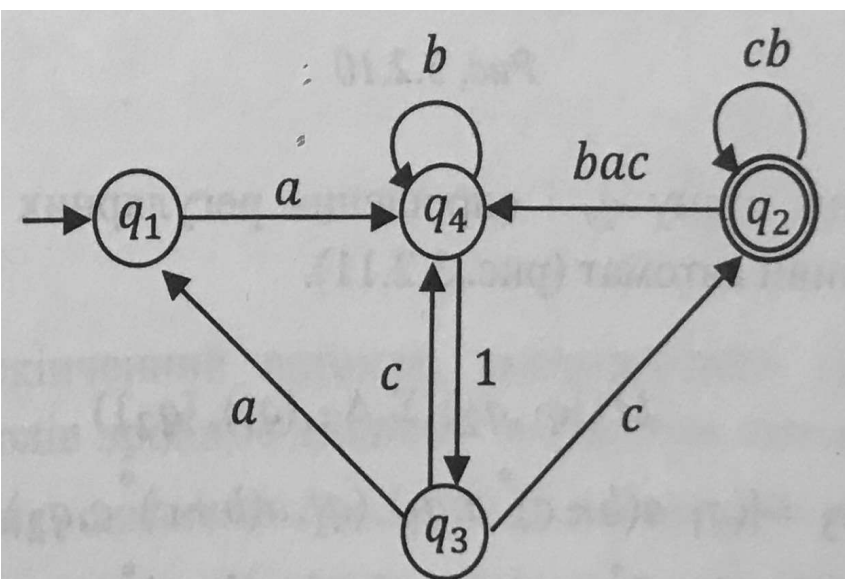
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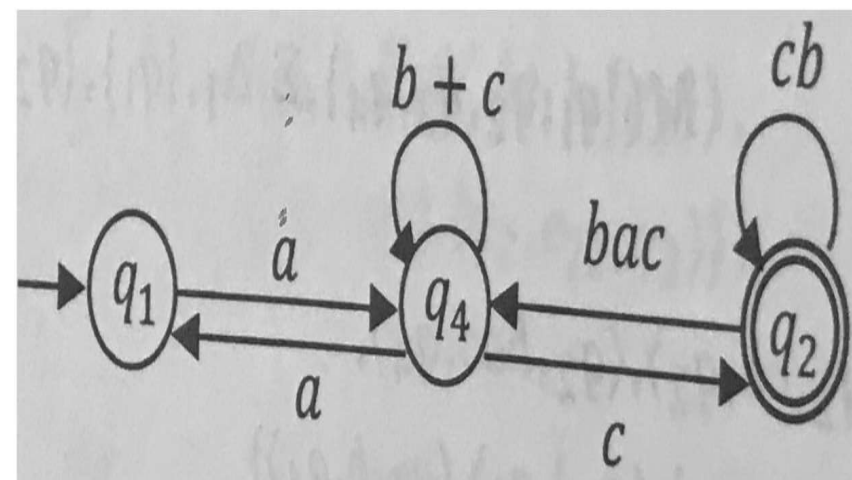
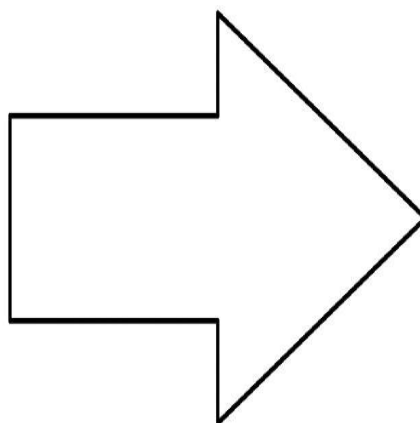
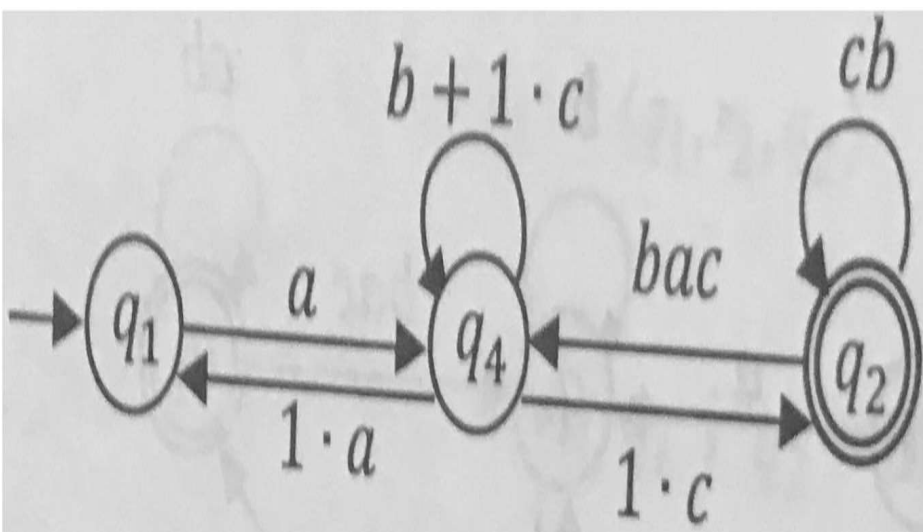
$$\Sigma = \{a, b, c\} \text{ і}$$

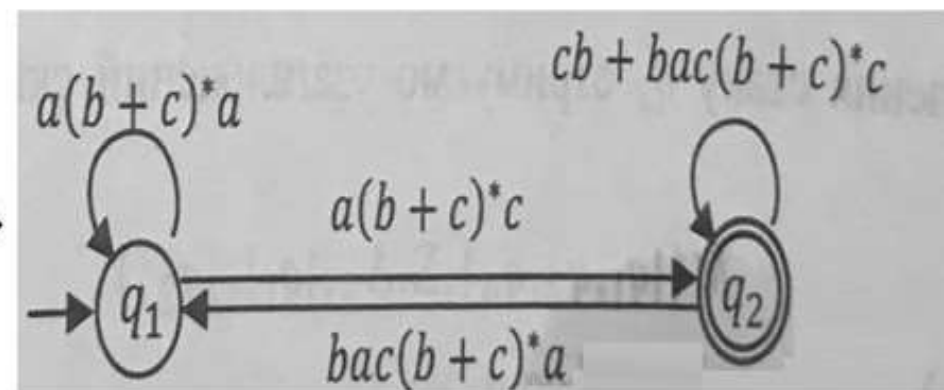
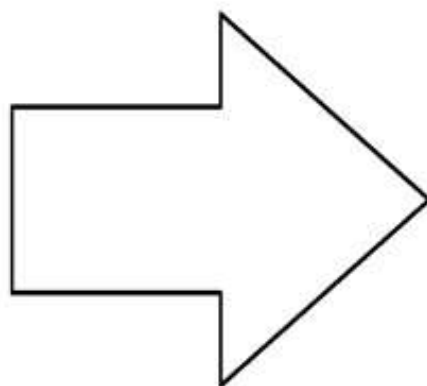
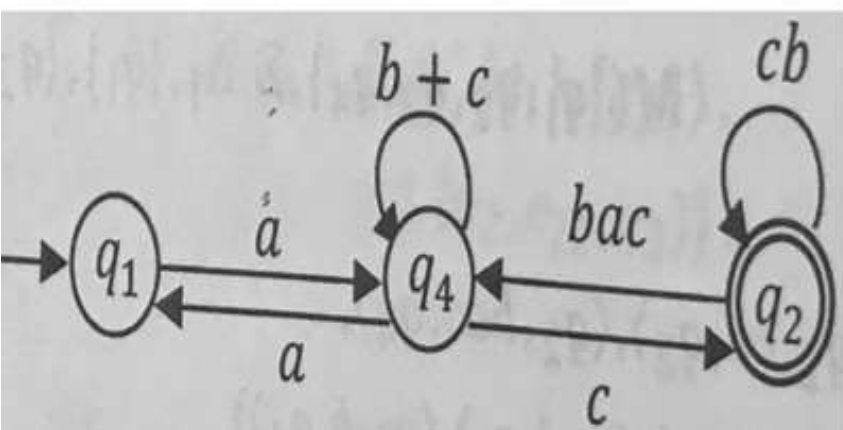
$$\Delta = \{\langle q_1, a, q_4 \rangle, \langle q_2, cb, q_2 \rangle,$$

$$\langle q_2, bac, q_4 \rangle, \langle q_3, a, q_1 \rangle, \langle q_3, c, q_2 \rangle, \langle q_3, c, q_4 \rangle, \langle q_4, \varepsilon, q_3 \rangle, \langle q_4, b, q_4 \rangle\}$$



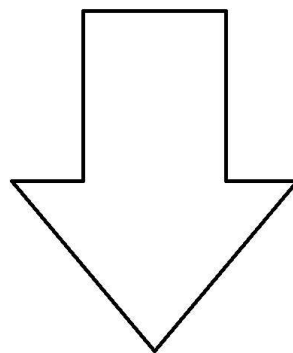
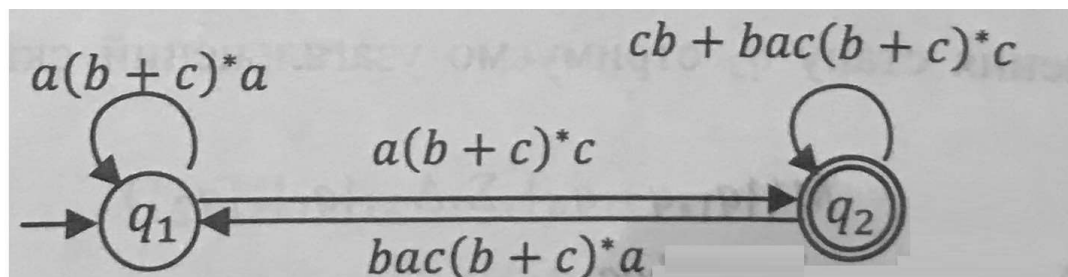






$$M(\{q_1, q_2\}, \Sigma, \Delta_3, \{q_1\}, \{q_2\}),$$

$$\Delta_3 = \{ \langle q_1, a(b+c)^* a, q_1 \rangle, \langle q_1, a(b+c)^* c, q_2 \rangle, \\ \langle q_2, bac(b+c)^* a, q_1 \rangle, \langle q_2, cb + bac(b+c)^* c, q_2 \rangle, \}.$$



Отже, мова  $L(M)$  задається регулярним виразом

$$(a(b+c)^*a)^* a(b+c)^* c(cb + bac(b+c)^*c + bac(b+c)^* a(a(b+c)^*a)^* a(b+c)^*c)^*.$$

\* вираз можна спростити