Suppose A, B, and C are regular. Prove

$((\overline{A}) \circ B) \cup C^*$ is regular.

- $\overline{A}$ is regular (closure under ——)
- C^* is regular (closure under $*$)
- $\overline{A} \circ B$ is regular (closure under $\circ$)
- $(\overline{A} \circ B) \cup C^*$ (closure under $\cup$)

Prove $(00)^+ \cup (11)$ is regular.

$\therefore$ $(00)^+$ and (11) are both regular languages.

$\therefore$ $(00)^+ \cup 11$ is a regular language (closure under union)