

**Problem 1.72.** Let  $\Sigma = 0, 1$ .

**Part a.** Let  $A = \{0^k u 0^k \mid k \geq 1 \text{ and } u \in \Sigma^*\}$ . Show that A is regular.

*Proof.* Solution Replace this text with the details of your proof or solution. □

**Part b.** Let  $B = \{0^k 1 u 0^k \mid k \geq 1 \text{ and } u \in \Sigma^*\}$ . Show that B is not regular.

*Proof.* Solution Replace this text with the details of your proof or solution. □