

# Review 1

## Automata & Theory of Computation

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Student ID:

Name:

1. Fill the blanks.

$$L = \{a^n b^n : n \geq 0\}$$

$$L^0 = \{ \quad \quad \quad \}$$

$$L^2 = \{ \quad \quad \quad \}$$

$$L^R = \{ \quad \quad \quad \}$$

$$L_1 = \{a, ab, bb\}$$

$$L_2 = \{b, bab, aa\}$$

$$L_1 L_2 = \{ \quad \quad \quad \}$$

2. If the grammar  $G$  with productions

$$S \rightarrow SS,$$

$$S \rightarrow \lambda,$$

$$S \rightarrow aSb,$$

$$S \rightarrow bSa$$

are given, show a derivation of (1), (2) with  $G$ .

(1)  $baab$

$$S \Rightarrow$$

(2)  $aabbba$

$$S \Rightarrow$$