

Print Name (family name first): _____

Write all answers in the space provided.

During this quiz it is prohibited to:

1. exchange information with any other person in any way, including by talking or exchanging papers or books;
2. use any electronic aid, including calculators;
3. use any books or notes;
4. leave the classroom before you complete and turn in your quiz.

I have read and understand all of the instructions above. On my honor, I pledge that I have not violated the provisions of the NJIT Academic Honor Code.

Signature and Date

1. Let L be the language Palindrome defined over $\Sigma = \{a, b\}$.

(a) Write out all strings of length at most 3 in L . Your list should be in order of increasing length.

(b) Give a counterexample showing that L is *not* closed under concatenation.

(c) Let L_n be the strings in L having length n . Give a formula for $|L_n|$.

(d) Consider the regular expression $(\mathbf{a+b})^*(\Lambda+\mathbf{a+b})(\mathbf{a+b})^*$. Give a counterexample showing that this regular expression does not generate L . Explain your answer.