Quiz 1

Problem 1. Complete the definitions. Be precise.

An **alphabet** is:

A **string** is:

A **language** is:

Problem 2. Draw a **DFA** M for the language

$$L = \{x \in \{a, b, c\}^* : x \text{ contains exactly one } a \text{ and exactly one } b\}.$$

(A string $x \in L$ can contain any number of c's.) Make your DFA have as few states as possible.

Problem 3 Using the formalism of your book, specify the machine M from Problem 2 as a 5-tuple: $M = (\quad , \quad , \quad , \quad , \quad)$ where $\cdots$

Problem 4 List the first 5 strings of L (still from Problem 2) in lexicographic order. Assume $a < b < c$.