Theory of Computation

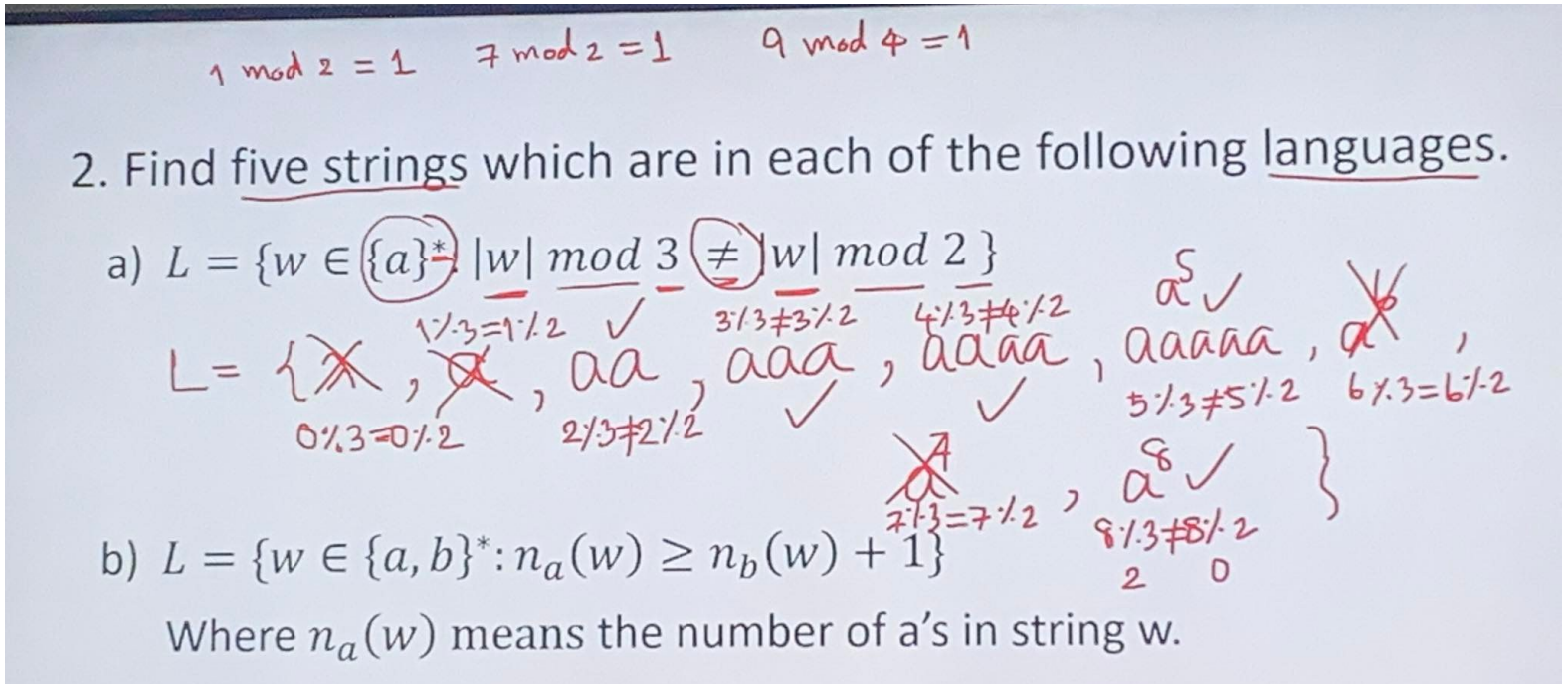
Exercise 1: (Mathematic preliminary, Language, String)

1. Let $\sum = \{a, b\}$ and $L = \{aa, bb\}$. Describe $\overline{L}$ by a set notation.

    1. L-bar = {a,b}* - {aa,bb}
    2. L-bar = |w|>=3 |w|<3-L
       = {w ∈ {a,b}*:|w|>=3}U{λ,a,b,ab,ba}

2. Find five strings which are in each of the following languages.

a) $L = \{w \in \{a\}^* : |w| \ mod \ 3 \ \neq |w| \ mod \ 2 \ \}$



b) $L = \{w \in \{a, b\}^* : n_a(w) \geq n_b(w) + 1\}$

Where $n_a(w)$ means the number of a's in string w.

$$L = \{a, aa, aaa, aab, aba\}$$