$\Sigma = \{a, b\}$

$L_1 = \{a^n b^m : (n+m) \text{ is even}\}$

$L_1 = \{ab, aabb, aaabbb, aaaabbbb, abbbbb,$
$aabbbb \cdots\}$

$L_2 = \{a^n b^m, n \geq 4, m < 3\}$

$L_2 = \{\lambda, aaaa, aaaab, aaaabb, aaaabbb, aaaaa,$
$aaaaab, aaaaabb, aaaaabbb \cdots\}$

$L_3 = \{a^n b^m, n < 4, m \leq 4\}$
$L_3 = \{\lambda, ab, aab, a, b, aaab, aaabb, aaaabbb$
$\cdots\}$

$L_4 = \{a^n b^m : n \geq 1, m \geq 1, nm \geq 3\}$

$L_4 = \{aaab, abbb, aaabb, aaabbb \cdots\}$

$L_5 = \{ab^n w : n \geq 3, w \in \{a, b\}^+\}$

$L_5 = \{abbb, abbbb, abbbbb \cdots\}$

$L_6 = \{v w v : v, w \in \{a, b\}^*, |v| = 2\}$
$L_6 = \{\lambda, aaaa, aabaaab, baaaba \cdots\}$

$\Sigma : \{0,1\}$

$L_7 :$ having only one pair of consecutive zeros

$L_7 : \{00, 001, 1001, 1100, 11001, 111001 \cdots\}$

$L_{11} :$ all strings ending in 0,1

$L_{11} : \{01, 100, 1101, 00101, 00101, 100101 \cdots\}$

$L_{12} :$ all strings not ending in 0,1

$L_{12} : \{\lambda, \}\text{off},$

$L_3 :$ all strings containing even number of zeros

$L_{13} : \{\lambda, 00, 0000, 000000, 0000100, 1010, 10010,$
$\qquad 1010010, 10000 \cdots\}$

$L_{14} :$ al two occurrence of substring 00.

$L_4 : \{0000, 0000000, 00001, 10000, 100001 \cdots\}$

$L_{15} :$ all strings not containing 101

$L_{15} : \{\lambda, 0, 1, 01, 001, 1001, 10001, 100010 \cdots\}$

**Task #1**

$\Sigma = \{a, b\}$

$L_8 =$ having exactly one a.
$L_8 = \{a, ab, bba, abb, bab, bbabb \ldots\}$

$L_9 =$ string containing no more than 3 a's.
$L_9 = \{\lambda, a, ab, aab, aaa, aa, aaabb, aaabbb, babab \ldots\}$

$L_{10} =$ all string that contains atleast one occurrence of each symbol in alphabet.

$L_{10} = \{ab, aabb, abbb, bab, bba, aaabbb \ldots\}$

$L_{18} =$ The language of all strings containing exactly two a's.

$L_{18} = \{aa, aab, bbaa, aabb, baabb \ldots\}$

$L_{19} =$ The language of string containing atleast two a's.

$L_{19} = \{aa, aab, baaa, bbaa, baba, bbaaabb \ldots\}$

$L_{20}$ = The language of all string that don't end with ab.

$L_{20}$ = {a, b, ba, bba, bbaaba, bababa ... }

$L_{21}$ = The language of all strings that begin or end with aa or bb.

$L_{21}$ = {aab, aabb, aaabbb, babaa, bbaabb ... }

$L_{22}$ = The language of all strings not containing the substring aa.

$L_{22}$ = {λ, a, b, ab, ba, bba, aba, baba, bbaba ... }

$L_{23}$ = The language of string in which number of a ii even.

$L_{23}$ = {λ, aa, aab, bbaa, aabb, bbaabbaa, bababaa ... }

$L_{17}$ = {w:|w| mod 3 = 0}

$L_{17}$ = {aaa, bbb, aaabbb, aab, baa, abb, bba ... }

$L_{24}$: The language of all strings in which both the number of a's & the number of b's is even.

$L_{24} = \{\lambda, aa, aaabb, bb, bbaa, bbaabb, bbaaaabb \dots\}$

$L_{18} = \{mina (w) \mod 3 = 0\}$

if a is ban 10 =) $L = \{0, 3, 9, 6, 12, 18 \dots\}$

if a is ban 2 =) $L = \{0, 11, 110, 1001, 1100, 1111\}$

$L_{27}$: The language of all strings containing both bb & aa as substring.

$L_{27} = \{aabb, aaabbb, bbaabb, baabb, babaabb \dots\}$

$L_{28}$: The language of all strings containing both aba & bab as substring.

$L_{28} = \{\lambda, aabab, abab, aababab, aababab \dots\}$

$L_{26}$: The language of strings in which every a (if there) is followed immediately by bb.

$L_{26} = \{\lambda, abb, aabb, babb, bbabb, bbbabb \dots\}$

$L_{25}$: The language of all strings containing no more than one occurrence of aa.

$L_{25} = \{\lambda, aa, aab, baa, bbaa, aabb, bbaabb \dots\}$