# Regular Language to Regular Expression

Consider {a,b} as input alphabet.

1. L = {w| the length of w is exactly 2}
2. L = {w| the length of w is maximum 2}
3. L = {w| the length of w is minimum 2}
4. L = {w| w is a string of even length}/ |w| mod 2 = 0
5. L = {w| w is a string of odd length}/ |w| mod 2 = 1
6. L = {w| w where |w| mod 3=0}
7. L = {w| w starts with ‘a’}
8. L = {w| w ends with ‘a’}
9. L = {w| w does contain ‘a’}
10. L = {w| w starts with ‘ab’}
11. L = {w| w ends with ‘ab’}
12. L = {w| w does contain ‘ab’}
13. L = {w| w has even number of a’s}
14. L = {w| w where na(w) mod 3=1}
15. L = {w| w where na(w) = 3}
16. L = {w| w starts with a and end b}
17. L = {w| w starts and end with same symbol}
18. L = {w| w starts and end with different symbol}
19. L = {w| where every ‘a’ should followed by ‘b’}
20. L = {w| where every ‘a’ should never be followed by ‘b’}
21. L = {w| where every ‘a’ should followed by ‘bb’}
22. L = {w| where every ‘a’ should never be followed by ‘bb’}
23. L = {w| w where ‘w’ either begins or ends with ab}
24. L = {w| w does contain three consecutive b’s}

Some basic conversions that may help to solve other problems.

1. a = {a}
2. b = {b}
3. ɛ = {ɛ}
4. ∅ = {}
5. a + b = {a, b}
6. ab + ba = {ab , ba}
7. a\* = set of all possible strings over a including ɛ
8. a+ = set of all possible strings over a excluding ɛ
9. (a+b)\* =set of all possible strings over a,b including ɛ
10. (a+b)+= set of all possible strings over a,b excluding ɛ