

Regular Expression Practice Sheet

1. Strings over $\{a, b\}$ where a appears an **even number of times**
2. Strings over $\{a, b, c\}$ where b appears **exactly three times**
3. Strings over $\{0, 1\}$ that **start and end with the same character**
4. Strings over $\{a, b\}$ that **contain ab as a substring**
5. Binary strings **divisible by 4** (end with 00)
6. Strings over $\{a, b, c\}$ that **do not contain abc as a substring**
7. Strings over $\{a, b\}$ where a appears **twice as many times as b**
8. Strings over $\{x, y, z\}$ where y appears **at most twice**
9. Strings of **length exactly 3** over $\{0, 1\}$
10. Strings over $\{a, b\}$ where **every b is immediately followed by a**
11. Strings over $\{0, 1\}$ that contain **no consecutive 1s**
12. Strings over $\{a, b\}$ that **do not contain bb**
13. Strings over $\{a, b\}$ that **start and end with b**
14. Strings over $\{0, 1\}$ where 0 s and 1 s appear **equally**
15. Strings over $\{a, b, c\}$ that **end with ac**
16. Strings of **length at most 4** over $\{a, b, c\}$
17. Strings over $\{a, b\}$ that **contain exactly one occurrence of ba**
18. Strings over $\{a, b\}$ that are **palindromes of length ≤ 5**
19. Strings over $\{a, b\}$ where b **only appears in even positions**
20. Strings over $\{a, b\}$ where a appears **at least once**
21. Strings over $\{0, 1\}$ that **contain exactly one 1**
22. Strings over $\{a, b\}$ where b appears at **the third position only**
23. Strings over $\{a, b, c\}$ that **start with ab**
24. Strings over $\{a, b\}$ that **do not contain aa**
25. Strings over $\{0, 1\}$ that **only contain alternating 0s and 1s**
26. Strings over $\{x, y\}$ where y **only appears in the last three positions**
27. Strings over $\{a, b\}$ that **contain both ab and ba as substrings**
28. Strings over $\{a, b, c\}$ where c appears **at least once and never before b**
29. Strings over $\{a, b\}$ where a appears an **odd number of times**
30. Strings over $\{a, b\}$ that **contain at least one b**
31. Strings over $\{a, b\}$ that **contain ba as a substring**
32. Strings over $\{a, b, c\}$ where b appears **at most once**
33. Strings over $\{a, b\}$ that **contain at least one aa**
34. Strings over $\{0, 1\}$ where 0 appears an **odd number of times**
35. Strings over $\{a, b\}$ that **start with a and end with b**
36. Strings over $\{0, 1\}$ that **end with 01**
37. Binary strings **divisible by 2** (end with 0)
38. Strings over $\{a, b\}$ where b appears **only before a**
39. Strings over $\{a, b, c\}$ where c appears **at least once**

40. Strings over $\{a, b\}$ that **contain at most two bs**
 41. Strings over $\{a, b, c\}$ where b appears **exactly twice**
 42. Strings over $\{a, b\}$ that **start with ab and end with ba**
 43. Strings over $\{a, b\}$ where **every a is followed by bb**
 44. Strings over $\{0, 1\}$ where **the number of 1s is odd**
 45. Strings over $\{a, b\}$ that **end in at least two as**
 46. Strings over $\{0, 1\}$ that **contain 110 as a substring**
 47. Strings over $\{a, b\}$ where b **never appears in the first half of the string**
 48. Strings over $\{a, b\}$ that contain **an even number of bs and at most three as**
 49. Strings over $\{a, b\}$ that **begin and end with different characters**
 50. Strings over $\{a, b\}$ where **each a is followed by at most one b**
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Instruction

- **Write a regular expression** for each language that correctly matches all valid strings while rejecting invalid ones.