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Actividad 3.1 Practicando los lenguajes regulares

4.- Let X = {aa, bb} and Y = {λ, b, ab}.

a) List the strings in the set XY.

XY = aa, bb, aab, bbb, aaab, bbab

b) How many strings of length 6 are there in X*?

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c) List the strings in the set Y* of length three or less.

λ, b, ab, bb, bab, abb, bbb

d) List the strings in the set X*Y* of length four or less

λ, b, ab, aa, bb, aab, bbb, aaab, bbab, aaaa, bbbb, abab,aabb,bbaa,bab,abb

14.- The set of strings over {a,b,c} in which all the a's procede the b's, which in turn precede the c's. It is possible that there are no a's, b's, or c's.

a*b*c*

15.- The same set as Exercise 14 without the null string.

aa*b*c*|a*bb*c*|a*b*cc*

16.- The set of strings over {a, b, c} with length three.

(a+b+c)(a+b+c)(a+b+c)

17.- The set of strings over {a, b, c} with length less than three.

(Epsilon+a+b+c)(Epsilon+a+b+c)

18.- The set of strings over {a, b, c} with length greater than three.

(a+b+c)(a+b+c)(a+b+c)(a+b+c)(a+b+c)*

19.- The set of strings over {a, b} that contain the substring ab and have length greater than two.

(a+b)* (ab) (a+b)* / (ab)

Fuente: T.A. Sudkamp. Languages and Machines: An Introduction to the Theory of Computer Science. Pearson, 3rd Edition (2005), pp. 59-61.