

1.)

$M_\alpha =$ all sequences of α

$M_\beta =$ all sequences of β

$M' =$ all strings that don't contain "abb"

$$M_\alpha \times M_\beta \times M' = M$$

Run the path algorithm on finite automata M .
from initial to ~~accepting~~, accepting until you meet all.
the criteria. $O(n \cdot m)$ where $n = |\alpha|$, $m = |\beta|$

2.) $M_1 =$ all sequences of strings L_1

$M_2 =$ all sequences of L_2 .

$M =$ common sequences of L_1 and L_2 .

$D =$ length of longest string in M .

$$M_1 \times M_2 = M$$

final length of longest string is accepted by
F. $\in M$ by running longest path algorithm on M
from initial to final and return length.