

Task1

Evgeny Bezuglov

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1. 1

- (a) $aaaa \Rightarrow aaa$
- (b) E
- (c) $bbbabaaabbb \Rightarrow abbabaaabbb \Rightarrow aababaaabbb \Rightarrow aaaabaaabbb \Rightarrow aaaaaaaabbb \Rightarrow aaaaaaaabb \Rightarrow aaaaaaaaaab \Rightarrow aaaaaaaaaa \Rightarrow aaaaaaaaaa$
- (d) $bbababaaaa \Rightarrow abababaaaa \Rightarrow aaababaaaa \Rightarrow aaaaabaaaa \Rightarrow aaaaaaaaaa \Rightarrow aaaaaaaaaa$
- (e) $bbbbbb \Rightarrow abbbbb \Rightarrow aabbbb \Rightarrow aaabb \Rightarrow aaaab \Rightarrow aaaaa \Rightarrow aaaa$
- (f) $ababababa \Rightarrow aaabababa \Rightarrow aaaaababa \Rightarrow aaaaaaaba \Rightarrow aaaaaaaaaa \Rightarrow aaaaaaaaaa$
- (g) $aabbbaabbbba \Rightarrow aaabaaabbbba \Rightarrow aaaaaabbbba \Rightarrow aaaaaaabba \Rightarrow aaaaaaaaba \Rightarrow aaaaaaaaaa \Rightarrow aaaaaaaaaa$
- (h) $bababaaabb \Rightarrow aababaaabb \Rightarrow aaaabaaabb \Rightarrow aaaaaaabb \Rightarrow aaaaaaaab \Rightarrow aaaaaaaaaa \Rightarrow aaaaaaaaaa$

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- (a) $aaaa \Rightarrow baaa$
- (b) E
- (c) $bbbabaaabbb \Rightarrow bbbaaabbb \Rightarrow bbbbaabbb$
- (d) $bbababaaaa \Rightarrow baabaaaa \Rightarrow bbabaaaa$
- (e) $bbbbbb$
- (f) $ababababa \Rightarrow aaababa \Rightarrow aaaaa \Rightarrow baaaa$
- (g) $aabbbaabbbba \Rightarrow babbaaabbbba$
- (h) $bababaaabb \Rightarrow aabaaabb \Rightarrow babaaabb$

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- (a) $aaaa$
- (b) E
- (c) $bbbabaaabbb \Rightarrow babbbaabbb \Rightarrow baabaabbb \Rightarrow baaaabbb \Rightarrow baaaabb \Rightarrow baaaab \Rightarrow baaaa \Rightarrow aaaa$
- (d) $bbababaaaa \Rightarrow abbabaaaa \Rightarrow aabbaaaa \Rightarrow aaabaaa \Rightarrow aaaaaa$
- (e) $bbbbbb \Rightarrow bbbb \Rightarrow bbb \Rightarrow bb \Rightarrow b \Rightarrow E$
- (f) $ababababa \Rightarrow aabababa \Rightarrow aaababa \Rightarrow aaaaba \Rightarrow aaaaa$
- (g) $aabbbaabbbba \Rightarrow aaabaabbbba \Rightarrow aaabaabab \Rightarrow aaaaabab \Rightarrow aaaaaab \Rightarrow aaaaaa$
- (h) $bababaaabb \Rightarrow baabaaabb \Rightarrow baaaaabb \Rightarrow baaaaab \Rightarrow baaaaa \Rightarrow aaaaaa$

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- (a) $aaaa \Rightarrow aaa \Rightarrow aa \Rightarrow a \Rightarrow E$
- (b) E

