

FOCS Day 7 HW

1. FSA to Regular Expression

- a) $01(11)^*0$
- b) 0^*10^*
- c) 1^*

2. Parenthesis Matching

Here L denotes "(" and R denotes ")"

- a) $(LR)^*$
- b) $(L(LR)^*R)^*$
- c) $(L(L(LR)^*R)^*R)^*$

3. [optional] Challenge Problems

- A regular expressions that matches strings with an odd number of 1s.
 - $0^*1(0|10^*1)^*$
- A regular expressions that matches strings with an even number of 0s.
 - $1^*(1|01^*0)^*$

- A regular expressions that matches strings with an odd number of 1s AND an even number of 0s.
 - $0^*1(0|10^*1)^* + 1^*(1|01^*0)^*$
- A regular expressions that matches strings with an odd number of 1s OR an even number of 0s
 - $(1^*(1|01^*0)^*|0^*1(0|10^*1)^*)$

4. [optional] Regular Expression practice

Used regexone's tutorials. Did few crosswords in regexcrossword.

5. [optional] Extended Regular Expressions

Which of these are just notational conveniences, like `[abc]` for `(a|b|c)`?

Ans. Repetition with quantifiers, backreferences,

Which increase the power of regular expressions?

Ans. Character classes, anchors