



Homework-W3

Homework – week 3

- pp. 125, Exercise 3.3.5 (c)(d)(f)(h)
- pp.152, Exercise 3.6.5

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- 3.3.5

(c) Answer:

$$\sqrt{\backslash^*([\wedge^*"]^* | ".*" | \wedge^* + [\wedge /])^* \backslash^* \sqrt{\backslash^*}}$$

(d) Answer:

want $\rightarrow 0 | A^?0^?1(A0^?1 | 01)^* A^?0^? | A0^?$

A $\rightarrow 0^?2(02)^*$

(f) All strings of a 's and b's with an even number of a 's and an odd number of b's.

Answer:

$$\begin{aligned} & (aa | bb)^* \left((ab | ba) (aa | bb)^* (ab | ba) \right. \\ & \left. (aa | bb)^* \right)^* \end{aligned}$$

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- 3.3.5 (h) Answer:
 $b^*(a+b)^*$

Exercise 3.6.5 Answer:

Table 1

state	a	b	ϵ
0	{0,1}	{0}	\emptyset
1	{1,2}	{1}	\emptyset
2	{2}	{2,3}	{0}
3	\emptyset	\emptyset	\emptyset

Table 2

state	a	b	ϵ
0	{1}	\emptyset	{3}
1	\emptyset	{2}	{0}
2	\emptyset	{3}	{1}
3	{0}	\emptyset	{2}

Table 3

state	a	b	ϵ
0	\emptyset	\emptyset	{1,2}
1	{2}	\emptyset	\emptyset
2	{2}	\emptyset	\emptyset
3	\emptyset	{4}	\emptyset
4	\emptyset	{4}	\emptyset