[S23] Theoretical Computer Science / Теоретические основы компьютерных наук

Started on	Thursday, 27 April 2023, 4:02 PM
State	Finished
Completed on	Thursday, 27 April 2023, 4:12 PM
Time taken	10 mins
Grade	**2.81** out of 5.00 (**56.25**%)

Question 1

Partially correct

Mark 0.31 out of 1.25

Flag question

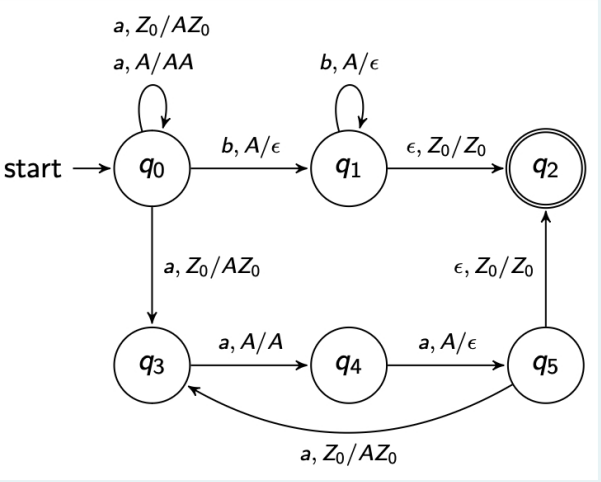
Match the following languages and NDPDAs:

$L_1 = \{a^n b^n \mid n \geq 0\} \cup \{a^{3n} \mid n \geq 0\}$

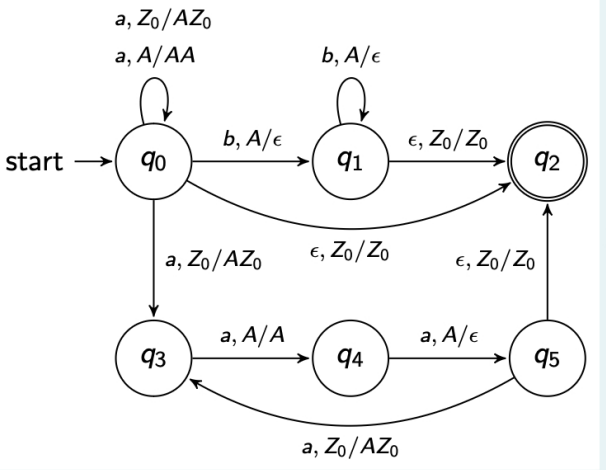
$L_2 = \{a^n b^n \mid n \geq 1\} \cup \{a^n b^{3n} \mid n \geq 1\}$

$L_3 = \{a^n b^n \mid n \geq 1\} \cup \{a^n b^{3n} \mid n \geq 0\}$

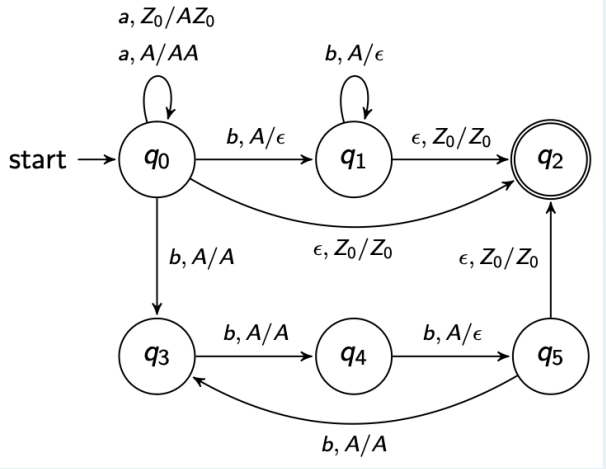
$L_4 = \{a^n b^n \mid n \geq 1\} \cup \{a^{3n} \mid n \geq 1\}$



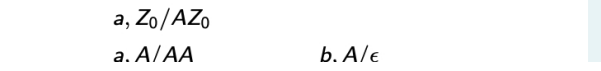
L2 ×



L1 ✓



L4 ×



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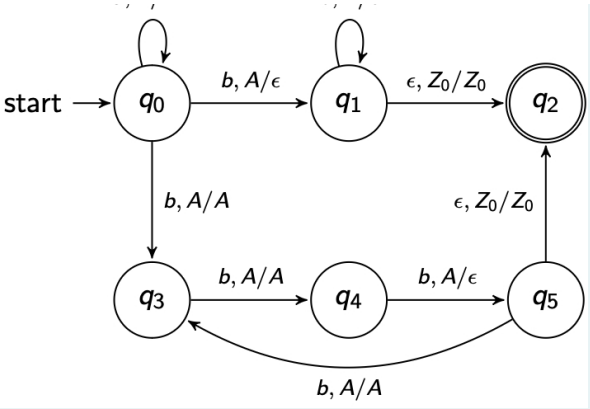
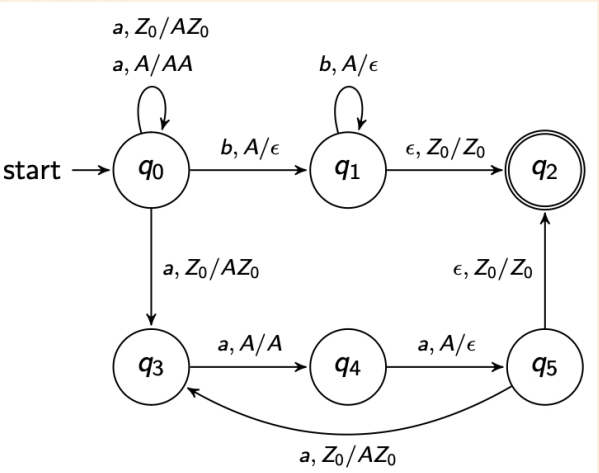


L3 ×

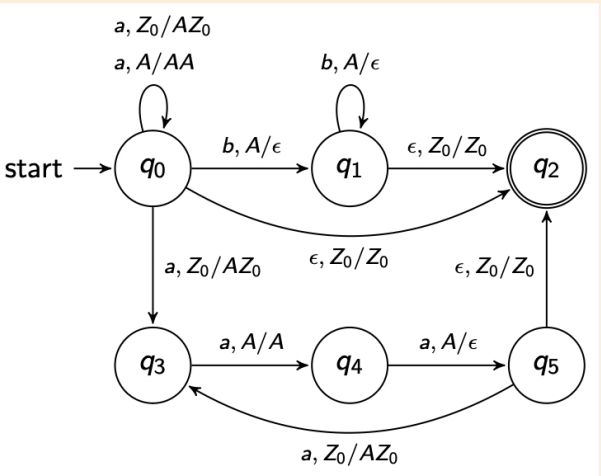
Your answer is partially correct.

You have correctly selected 1.

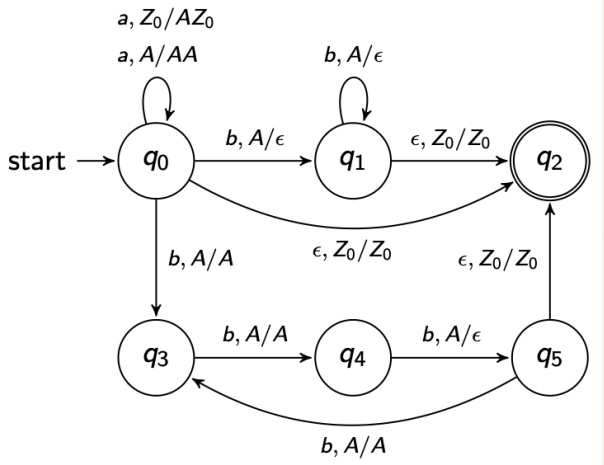
The correct answer is:



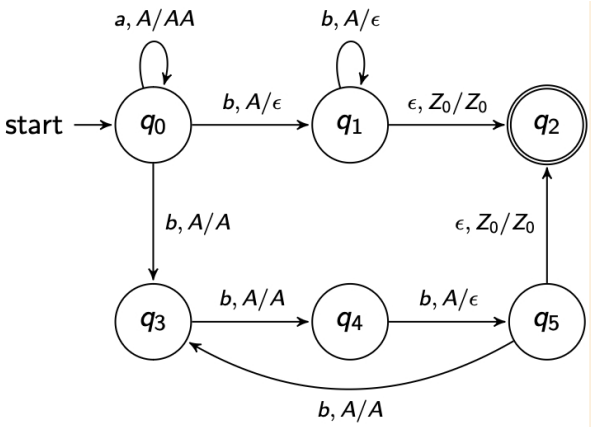
→ L4,



→ L1,



→ L3,



→ L2

Question 2

Correct

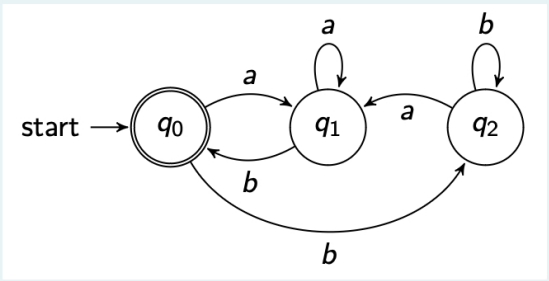
Mark 1.25 out of 1.25

Flag question

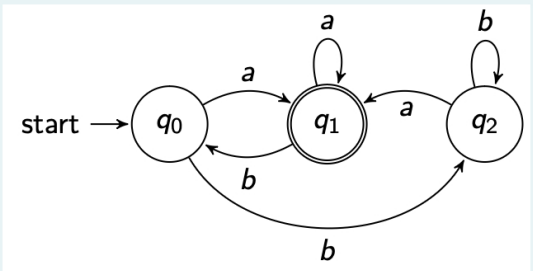
Which of the following FSAs could have been used for receiving next Regular Expressions in the k=-1 step of Kleene's Algorithm?

$$R_{00}^{-1} = \epsilon \quad R_{01}^{-1} = a \quad R_{02}^{-1} = b$$
$$R_{10}^{-1} = b \quad R_{11}^{-1} = a \mid \epsilon \quad R_{12}^{-1} = \emptyset$$
$$R_{20}^{-1} = \emptyset \quad R_{21}^{-1} = a \quad R_{22}^{-1} = b \mid \epsilon$$

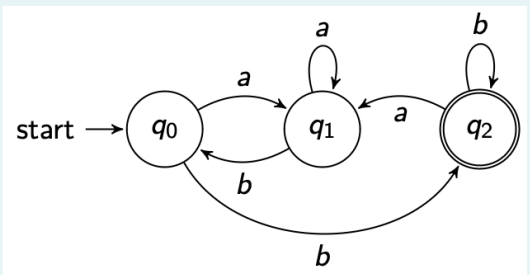
a.



b.



c.



d. All of the above ✓

e. None of the above

Your answer is correct.

The correct answer is:
All of the above

Question 3

Incorrect

Mark 0.00 out of 1.25

Flag question

NDTM has a greater expressive power than...

a. NDFSA ✓

b. DFSA ✓

c. DPDA ✓

d. NDPDA ✓

e. DTM ✗

Your answer is incorrect.

The correct answers are:
DFSA,

NDFSA,

DPDA,

NDPDA

Question 4

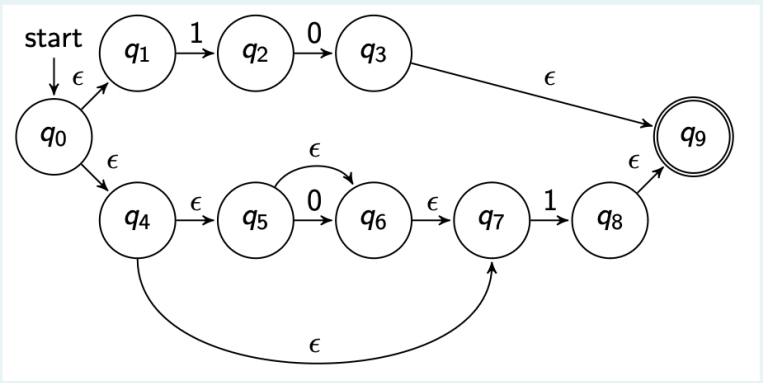
Correct

Mark 1.25 out of 1.25

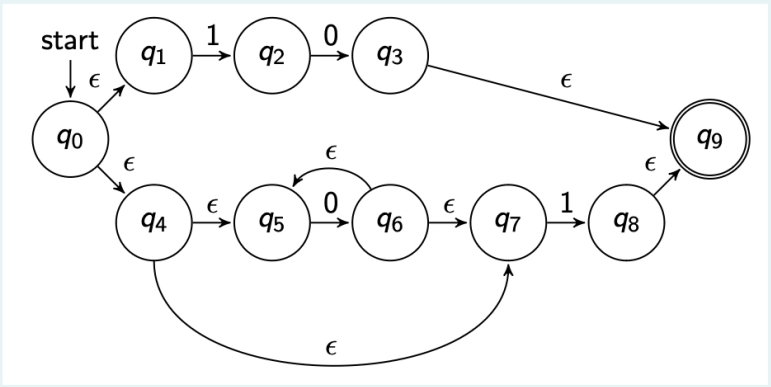
Flag question

Which of the following (N)FSAs is the result of Thompson's Construction application to (10)|(0*1)?

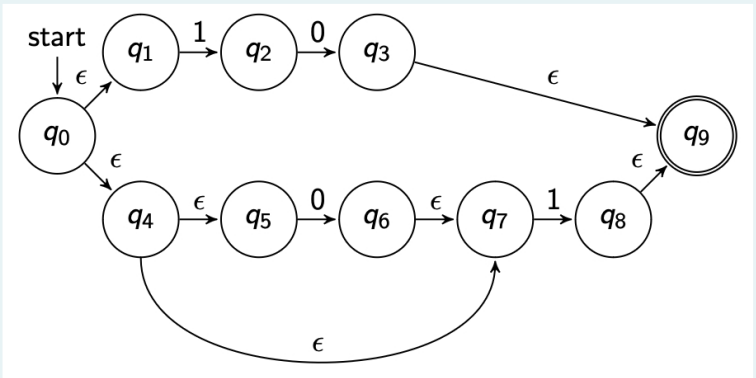
a.



b. ✓



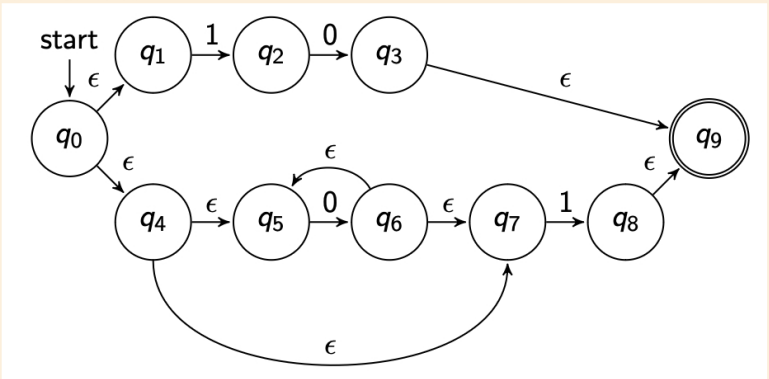
c.



d. None of the above

Your answer is correct.

The correct answer is:



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