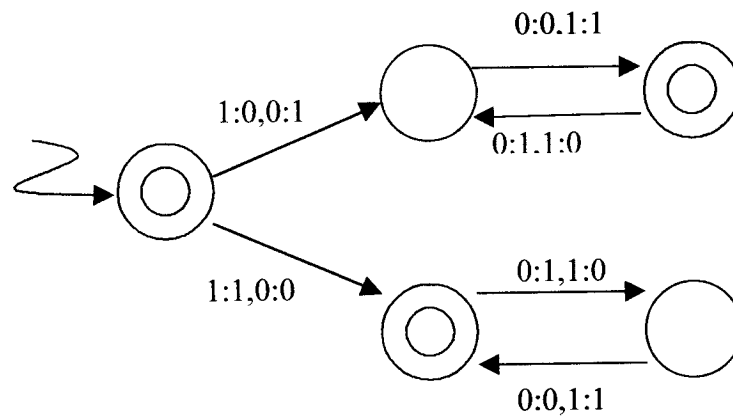


פתרון תרגיל בית 2

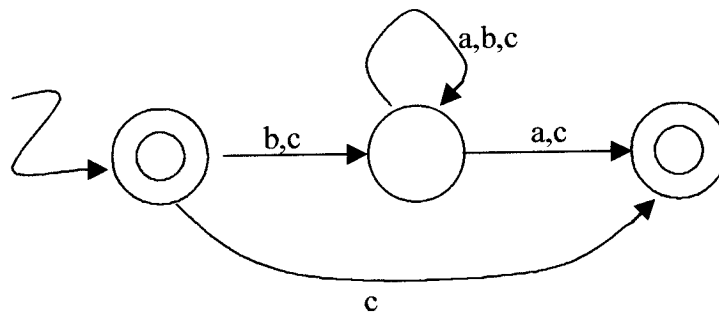
שאלה 1



The transducer is functional since every string in Σ^* is mapped to exactly one string (the empty string is mapped to itself).

שאלה 2

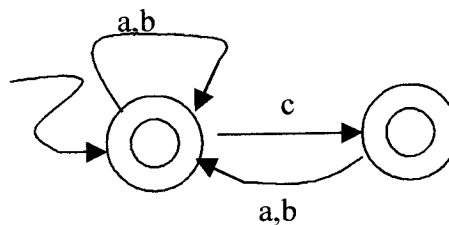
א.



$[[b | c] [a | b | c]^* [a | c]] | c | 0$

$[a | b | c]^* \& \sim[a ?^*] \& \sim[?^* b]$

ב.



$[a | b | c]^* - \$[c c]$

$[a | b | c]^* \& \sim[?^* c c ?^*]$

עבור שאלות 3 ו-4 נשתמש בטבלת ההמרה הבאה:

a	א
b	ב
g	ג
d	ד
h	ה
v	ו
z	ז
x	ח
f	ט
i	י
c	כ
l	ל
m	מ
n	נ
s	ס
y	ע
p	פ
q	צ
k	ק
r	ר
w	ש
t	ת

שאלה 3

```
read regex t -> 0 || .#. h _ [t | d | f] ,, [t z] -> [z d] , [t q] -> [q f] , [t s] -> [s t] , [t w] ->
[w t] || .#. h _;
```

שאלה 4

```
define root [g d l | l b w | x z k | i b l | i k r | i d y | i w b |
k v m | y v p | l v n | w v b | n p l | n g w | n y m | n g y | n s y | n x l | n h g];
define aitn [a | i | t | n];
define gender [male | female];
define number [singular | plural];
define body [first | second | third];
define BaseForms root %+ body %+ number %+ gender;

define r1 [ . . ] -> t || .#. _ root [%+ second | %+ third %+ number %+ female];
define r2 [ . . ] -> a || .#. _ root %+ first %+ singular;
define r3 [ . . ] -> n || .#. _ root %+ first %+ plural;
define r4 [ . . ] -> i || .#. _ root %+ third %+ number %+ male;
define PlantPrefix r1 .o. r2 .o. r3 .o. r4;
```

```
define r5 [ . ] -> i || .#. t root _ %+ second %+ singular %+ female;
define r6 [ . ] -> v || .#. t root _ %+ second %+ plural , .#. i root _ %+ third %+ plural
%+ male;
define r7 [ . ] -> n h || .#. t root _ %+ third %+ plural %+ female;
define PlantSufix r5 .o. r6 .o. r7;

define PlantInfix [ . ] -> i || .#. aitrn ? ? _;

define correct i -> 0 || .#. t ? ? _ ? n h;

define Exceptions i -> v || .#. aitrn _ ,, v -> 0 || .#. aitrn ? _ ,, n -> 0 || .#. aitrn _ [p | g | s];

define Delete %+ ?* @-> 0;

read regex BaseForms .o. PlantPrefix .o. PlantSufix .o. PlantInfix .o. correct .o.
Exceptions .o. Delete;
```