Quiz # Solution.

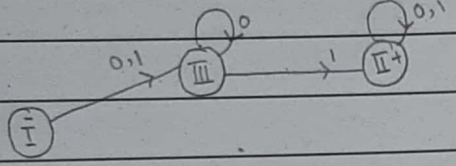
Continuation Sheet _____ of _____

20K-0247.

Ineta Sattani.

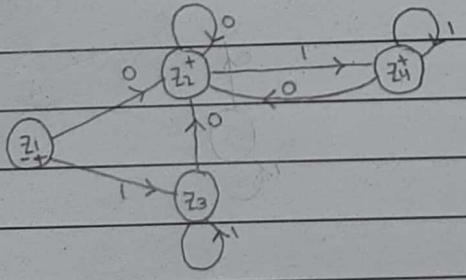
QUESTION 1:

	0	1	I	II	a same b - I II
- q_0 I	q_1 III	q_3 III	$q_0\ q_1\ q_2\ q_3$	q_4	III
q_1 III	q_2 III	q_4 II	I	II	$q_1\ q_2\ q_3$.
q_2 III	q_1 III	q_4 II	q_0	q_4	III
q_3 III	q_2 III	q_4 II	I	II	$q_1\ q_2\ q_3$.
+ q_4 II	q_4 II	q_4 II	q_0	q_4	



QUESTION 2:

	0	1
$\rightarrow Z_1 \equiv q_1$	$(q_3,q_1) \equiv Z_2$	$q_2 \equiv Z_3$
$\equiv Z_2^*(q_3,q_1)$	$(q_3,q_1) \equiv Z_2$	$(q_3,q_1,q_2) \equiv Z_4$
$Z_3 \equiv q_2$	$(q_3,q_1) \equiv Z_2$	$q_2 \equiv Z_3$
$Z_4^+ \equiv (q_3,q_1,q_2)$	$(q_3,q_1) \equiv Z_2$	$(q_3,q_1,q_2) \equiv Z_4$



These cases would be considered...

QUESTION 3:

let $w = a^n b^n$ $w^R = b^n a^n$

$ww^R = a^n b^n b^n a^n$, Take $n=3$

$\underbrace{aaa}_{x}\underbrace{b}_{y}\underbrace{bbbbaaa}_{z}$ $y>0$ and $|xy| \leq 3$

y^0 (pumping y, 0^{th} time): abbbbbbaaa

which is not a concatenation of word and its reverse hence given is not a regular language

2 languages that are regular.

As a word itself is a language so.

① $\underbrace{aabbaa}_{w}\underbrace{}_{w^R}$

② $\underbrace{aba}_{w}\underbrace{aba}_{w^R}$.

Lenguages required

$b(aa)^*b$, $a(bb)^*A$

QUESTION 4.

Mealey to Moore Machine.