

QUIZ 2 (SECI 1013 - 03) - DISCRETE STRUCTURE

i. a) $R_1 = \{(6,4), (8,4), (8,6)\}$ 3

b) Domain of $R_1 = \{6, 8\}$ 1

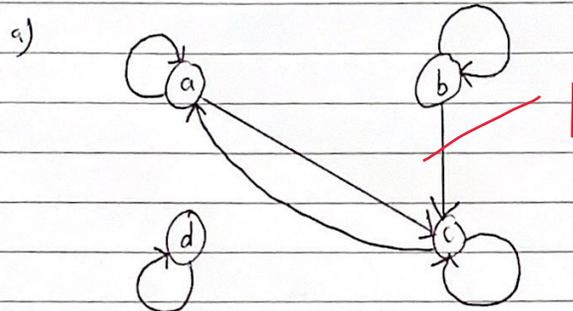
Range of $R_1 = \{4, 6\}$

c)

	4	6	8
4	0	0	0
6	1	0	0
8	1	1	0

\therefore This relation is irreflexive 1
because value 0 on its diagonal

2. $R_2 = \{(a, a), (a, c), (b, b), (b, c), (c, a), (c, c), (d, d)\}$



	a	b	c	d
In-degree	2	1	3	1
Out-degree	2	2	2	1

b)

$$M_{R_2} = \begin{matrix} & \begin{matrix} a & b & c & d \end{matrix} \\ \begin{matrix} a \\ b \\ c \\ d \end{matrix} & \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \end{matrix}$$

\therefore reflexive because value 1 on its diagonal

\therefore this is not symmetric relation

because $(c, b) \notin R$

$\therefore R_2$ is not an equivalence relation because R_2 is not symmetric.