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Group 5 No: Date:

Quiz 2

1) $A = \{1, 2, 3, 4, 5, 6\}$
$a + b < 6$

a) $R = \{(1,1), (1,2), (1,3), (1,4), (1,5), (2,1), (2,2), (3,1), (4,1), (5,1)\}$

b) Domain $= \{1, 2, 3, 4, 5\}$
Range $= \{1, 2, 3, 4, 5\}$

2)

a) $M_s =$

	1	2	3	4
1	1	0	1	0
2	1	1	1	0
3	0	0	1	0
4	0	0	0	1

b)

	1	2	3	4
In-degree	2	1	3	1
Out-degree	2	3	1	1

c) S is not reflexive because $\exists x \in S, (x,x) \notin S$
The main diagonal has value 0 and 1 on it.
~~S is not transitive because (1,1) and (1,3) $\in$ S, but~~
S is transitive cause $\forall a,b \in S, (a,b) \in S \wedge (b,c) \in R \Rightarrow (a,c) \in S$.
S is antisymmetric relation cause $\forall x, y \in R, (x,y) \in R \wedge x \neq y \Rightarrow (y,x) \in R$.
Therefore, S is not partial order since its not reflexive.