

# Assignment\_11

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24.

a) is not equivalence relation

b) is equivalence relation

c) is equivalence relation

30.

a)  $[010]_R = a \in A$  | *The first three bits of  $s$  are 010*

b)  $[1011]_R = a \in A$  | *The first three bits of  $s$  are 101*

c)  $[11111]_R = a \in A$  | *The first three bits of  $s$  are 111*

d)  $[01010101]_R = a \in A$  | *The first three bits of  $s$  are 010*

36.

a)  $[4]_R \{x | x \bmod 2 = 0\}$

b)  $[4]_R \{x | x \bmod 3 = 1\}$

c)  $[4]_R \{x | x \bmod 6 = 2\}$

d)  $[4]_R \{x | x \bmod 8 = 4\}$

**42.**

**(a) A partition**

**(b) Not a partition**

**(c) A partition**

**(d) Not a partition**

**44.**

**(a) A partition**

**(b) Not a partition**

**(c) A partition**

**(d) A partition**

**(e) Not a partition**

**4. Multigraph**

**8. Directed Multigraph**

**12.**

**Proof:**

**Symmetric**

**Let  $(a, b) \in R$**

**So there is an edge between a and b.**

**We know the edge is undirected.**

$$(b, a) \in R$$

**Reflexive**

**There is a loop at every vertex,**

**So  $\forall a, (a, a) \in R$**

**$R$  is symmetric and reflexive.**

**22.**

