22MAT121-Discrete Mathematics
AIE-C

SET-A

1. Let R be a relation on the set of ordered pairs of positive integers such that $((a, b), (c, d)) \in R$ if and only if $a + d = b + c$. Show that R is an equivalence relation. What are the elements in the equivalence class of $(1, 1)$? [6 Marks]

2. Let $R = \{(x, y) : x = y^2\}$ is a relation defined on $\mathbb{Z}^+$. Is it reflexive, irreflexive, antisymmetric, and/or asymmetric? [4 Marks]

22MAT121-Discrete Mathematics
AIE-C

SET-B

1. Let $R = \{(x, y) : x < y^2\}$ is a relation defined on $\mathbb{Z}^+$. Is it reflexive, irreflexive, antisymmetric, and/or asymmetric? [4 Marks]

2. Let R be a relation on the set of ordered pairs of positive integers such that $((a, b), (c, d)) \in R$ if and only if $ad = bc$. Show that R is an equivalence relation. What are the elements in the equivalence class of $(2, 2)$? [6 Marks]

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