

Solutions

CS 381

Quiz 6

1. Which ordered pairs are in the relation $\{(x,y) \mid x > y+1\}$ on the set $\{1, 2, 3, 4\}$?

1 pt.

$$\{(3, 1), (4, 1), (4, 2)\}$$

2. Consider the following relations on $\{1,2,3\}$.

2 pts.

$$R_1 = \{(1,1), (1,3), (2,2), (3,1)\}$$

$$R_2 = \{(1,1), (2,2), (2,1), (1,2)\}$$

$$R_3 = \{(1,2), (2,1), (3,3)\}$$

$$R_4 = \{(1,3), (2,3)\}$$

$$R_5 = \{(1,1), (1,3), (2,2), (3,3)\}$$

- a) Which, if any, of these relations are reflexive?

$$R_5$$

- b) Which, if any, of these relations are symmetric?

$$R_1, R_2, R_3$$

- c) Which, if any, of these relations are antisymmetric?

$$R_4, R_5$$

- d) Which, if any, of these relations are transitive?

$$R_1, R_2, R_5$$