

Consider the two relations given below on \mathbb{R} .

$$xRy \text{ iff } x \leq y$$

$$xSy \text{ iff } y - x \geq 2$$

Choose and complete 2 of the following problems. Justify all answers.

- 1) Is R reflexive?
- 2) Is R symmetric?
- 3) Is R antisymmetric?
- 4) Is R transitive?
- 5) Is R total?

Choose and complete 2 of the following problems. Justify all answers.

- 1) Is S reflexive?
- 2) Is S symmetric?
- 3) Is S antisymmetric?
- 4) Is S transitive?
- 5) Is S total?