Assignment 1

1. Let R be the relation on {1, 2, 3, 4} such that

R = (1,1) , (1, 4), (2, 3), (3, 1), (3, 3), (4, 4)

Find:

(a) the reflexive closure of R.

(b) the symmetric closure of R.

(c) the transitive closure of R.

2. Let R be the relation represented by the matrix

A picture containing text, clock

Description automatically generated

Find the matrix representing

A picture containing text

Description automatically generated

3. Let

Diagram

Description automatically generated

Find

Shape, rectangle

Description automatically generated with medium confidence

4. For each of these relations on the set {1, 2, 3, 4} decide whether it is reflexive, whether it is symmetric, whether it is antisymmetric, and whether it is transitive.

Text, letter

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