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Question 1
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Part 1
R = {(4, 4), (1, 1), (3, 3), (2, 2)}
R is reflexive

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Question 1
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Part 2
R = {('a', 'a'), ('c', 'c')}
R is reflexive

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Question 2
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Part 1
R = {(4, 4), (1, 2), (3, 3), (2, 1)}
R is symmetric

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Question 2
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Part 2
R = {(1, 2), (3, 3)}
R is not symmetric
R* = {(1, 2), (2, 1), (3, 3)}
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 Question 3
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 Part 1
 a) R =  {('d', 'd'), ('b', 'c'), ('a', 'c'), ('a', 'b')}
 --------------------------------
 Question 3
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 Part 2
 a) R =  {(2, 2), (3, 1), (1, 1), (1, 3), (3, 2)}
 --------------------------------
 Question 4
 --------------------------------
 Part 1
 a) R is  {(2, 3), (1, 1), (2, 2)}
 b) R is not equivalence relation
 c) reflexive is  False symmetric is  False transitive is True
 --------------------------------
 Question 4
 --------------------------------
 Part 2
 a) R is {('a', 'a'), ('c', 'c'), ('b', 'b'), ('b', 'c'), ('c', 'b')}
 b) R is equivalence relation
 c) reflexive is True symmetric is  True transitive is True
 --------------------------------
 Question 5
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 Part 1
 a) S = {1, 2, 3, 4}
 b) R = {(4, 4), (1, 2), (3, 3), (2, 2), (1, 1), (4, 1), (4, 2)}
 c) (S,R) is not a poset
 d) Reflexive is True , Antisymmetric is False transitive is True
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Question 5
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Part 2
a) S = {0, 1, 2, 3}
b) R = {(0, 1), (1, 2), (0, 0), (1, 1), (0, 3), (2, 0), (0, 2), (3, 3), (2, 2), (1, 0), (1, 3)}
c) (S,R) is not a poset
d) Reflexive is True , Antisymmetric is False transitive is False

Process finished with exit code 0
```