```
1a.) R = {(1, 1), (4, 4), (2, 2), (3, 3)}.
1b.) R is reflexive.

1a.) R = {('a', 'a'), ('c', 'c')}.
1b.) R is not reflexive.
1c.) R* = {('a', 'a'), ('c', 'c'), ('b', 'b'), ('d', 'd')}.

2a.) R = {(1, 2), (4, 4), (2, 1), (3, 3)}.
2b.) R is symmetric.

2a.) R = {(1, 2), (3, 3)}.
2b.) R is not symmetric.
2c.) R* = {(1, 2), (3, 3), (2, 1)}.

3a.) R = {('a', 'b'), ('d', 'd'), ('b', 'c'), ('a', 'c')}.
3b.) R is transitive.

3a.) R = {(1, 1), (1, 3), (2, 2), (3, 1), (3, 2)}.
3b.) R is not transitive.
3c.) R* = {(1, 1), (1, 2), (1, 3), (2, 2), (3, 1), (3, 2)}.

4a.) R = {(1, 1), (1, 2), (2, 2), (3, 3), (4, 1), (4, 2), (4, 4)}.
4b.) R is not an equivalence relation.
4c.) R is not an equivalence relation because it is not symmetric and transitive.

4a.) R = {(0, 0), (0, 1), (0, 2), (0, 3), (1, 0), (1, 1), (1, 2), (1, 3), (2, 0), (2, 2), (3, 3)}.
4b.) R is not an equivalence relation.
4c.) R is not an equivalence relation because it is not symmetric.

5a.) S = {1, 2, 3, 4}.
5b.) R = {(1, 1), (1, 2), (2, 2), (3, 3), (4, 1), (4, 2), (4, 4)}.
5c.) (S,R) is not a poset because it is not transitive.

5a.) S = {0, 1, 2, 3}.
5b.) R = {(0, 0), (0, 1), (0, 2), (0, 3), (1, 0), (1, 1), (1, 2), (1, 3), (2, 0), (2, 2), (3, 3)}.
5c.) (S,R) is not a poset because it is not antisymmetric.
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