

1. Ex 1:
 - a) $R = [(1, 1), (4, 4), (2, 2), (3, 3)]$
 - b) R is reflexive: True
 Ex 2:
 - a) $R = [('a', 'a'), ('c', 'c')]$
 - b) R is reflexive: False
 - c) R^* if not reflexive: $[('a', 'a'), ('c', 'c'), ('b', 'b'), ('d', 'd')]$

2. Ex 1:
 - a) $R = [(1, 2), (4, 4), (2, 1), (3, 3)]$
 - b) R is symmetric: True
 Ex 2:
 - a) $R = [(1, 2), (3, 3)]$
 - b) R is symmetric: False
 - c) R^* if not symmetric: $[(1, 2), (3, 3), (2, 1)]$

3. Ex 1:
 - a) $R = [('a', 'b'), ('d', 'd'), ('b', 'c'), ('a', 'c')]$
 - b) R is transitive: True
 Ex 2:
 - a) $R = [(1, 1), (1, 3), (2, 2), (3, 1), (3, 2)]$
 - b) R is transitive: False
 - c) R^* if not transitive: $[(1, 1), (1, 3), (2, 2), (3, 1), (3, 2), (1, 2), (3, 3)]$

4. Ex 1:
 - a) $R = [(1, 1), (2, 2), (2, 3)]$
 - b) R is not an equivalence relation
 - c) R is not reflexive.
 - c) R is not symmetric.
 Ex 2:
 - a) $R = [('a', 'a'), ('b', 'b'), ('c', 'c'), ('b', 'c'), ('c', 'b')]$
 - b) R is an equivalence relation

5. Ex 1:
 - a) $S = \{1, 2, 3, 4\}$
 - b) $R = [(1, 1), (1, 2), (2, 2), (3, 3), (4, 1), (4, 2), (4, 4)]$
 - c) (S, R) is a poset: True
 Ex 2:
 - a) $S = \{0, 1, 2, 3\}$
 - b) $R = [(0, 0), (0, 1), (0, 2), (0, 3), (1, 0), (1, 1), (1, 2), (1, 3), (2, 0), (2, 2), (3, 3)]$
 - c) (S, R) is a poset: False
 - d) (S, R) isn't a poset because it is not antisymmetric