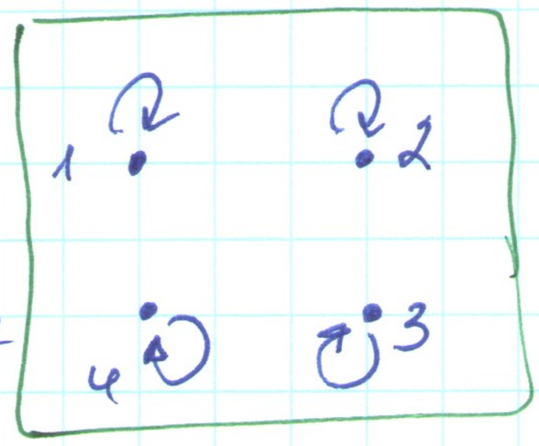
CS135 Section 9.6

page 630 / 1 (a, c, e) $S = \{0, 1, 2, 3\}$



a) $\{(0,0), (1,1), (2,2), (3,3)\}$

- reflexive, because all (x,x) are present
- asymmetric, because no (x,y) and (y,x), $y \neq x$ are present
- transitive (no transitions are present)

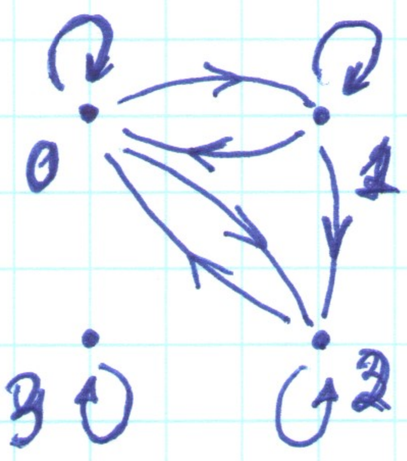
Therefore, it is a partial ordering

c) $\{(0,0), (1,1), (1,2), (2,2), (3,3)\}$

- reflexive (all loops are present)
- asymmetric (1,2) is present, but no (2,1)
- transitive (1,2) and (2,2) produce (1,2) present ✓

Therefore, it is a partial ordering

e)



- reflexive (all loops are present)
- not antisymmetric, because $(0,1)$ and $(1,0)$ but $1 \neq 0$.

Therefore, it is not a partial ordering.