

§2.3 Homework Solutions

3 a) None b) S (one hopes!) c) T d) RST e) None

7) There may exist some $a \in \mathbb{R}$ such that it is not related to any b (or itself)

9) a) A, T (not R since $(1,1)$ and $(2,2)$ not both in R
not S since $(1,2) \in R$ but $(2,1)$ is not
(vacuously) T since no chain of the form $(a,b), (b,c)$ is in R
(vacuously) A since no pairs (a,b) and (b,a) are in R)

b) None [BB] c) R, S [BB]

d) RST (not A since eg $(1,-1)$ and $(-1,1) \in R$ but $-1 \neq 1$)

e) R only