1)

E is reflexive

E is not symmetric, i E f but f $\not{E}$ i

E is not antisymmetric, aEe and eEa (a ≠ e)

E is transitivy

2)

R is reflexive. because XRX, sum(x) ≤ sum(x) is true

R is not symmetric, {1, 3, 30} R {1, 5, 50} but {1,5,50} $\not{R}$ {1,3,30}

R not antisymmetric, if XRY and YRX, but X = {1,3,30}, Y = {1,13,20}, X ≠ Y

R is transitive, S(X) = 25   S(Y) = 30   S(Z) = 40, XRY, YRZ, XRZ

3)

{(-1,0),(0,1),(1,0)},

{(-1,1),(0,2),(1,1)},

{(-1,2),(0,3),(1,2)},

{(-1,3),(1,3)}

{(0,0)}

4)