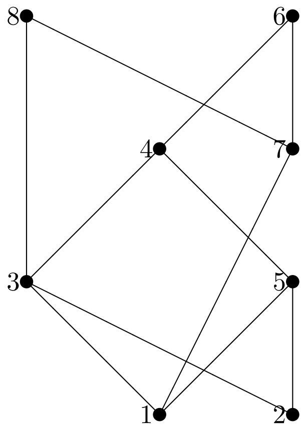
Name .... group DA... row .... col....

1.	2.	$\sum$

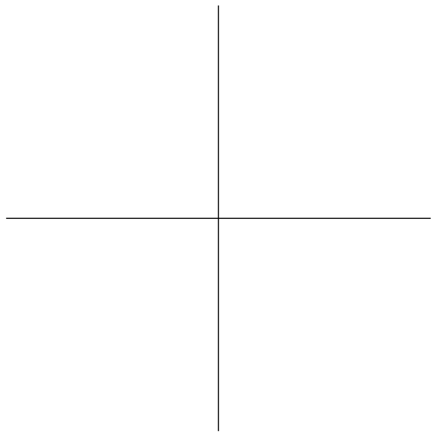
1. Find inf for every par of elements



inf	1	2	3	4	5	6	7	8
1	1	x	x	x	x	x	x	x
2		2	x	x	x	x	x	x
3			3	x	x	x	x	x
4				4	x	x	x	x
5					5	x	x	x
6						6	x	x
7							7	x
8								8

2. For $(x, y), (s, t) \in \mathbb{N}_+^2$ $(x, y) \preceq (s, t)$ iff $(x, y) = (s, t) \vee 2x + y < s + t$. Prove that $\preceq$ is a partial order. Draw the Hasse diagram for $(\{(x, y) : x, y \in \{0, 1, 2\}\}, \preceq)$.

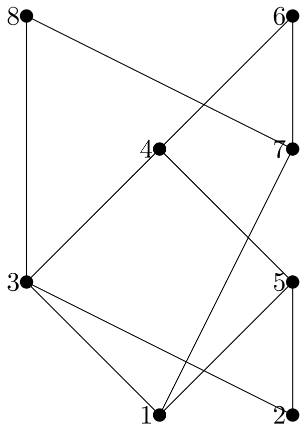
3. For $(x,y),(s,t) \in \mathbb{R}^2$ let $(x,y)R(s,t) \Leftrightarrow \exists k \in \mathbb{Z}\ \lfloor\sqrt{x^2+y^2}\rfloor + 2k = \lfloor\sqrt{s^2+t^2}\rfloor$. Prove R is equivalence relation. Find equivalence class $[(a,b)]_R$. Draw $[(\frac{1}{3},\frac{1}{3})]_R$.



Name .... group DA... row .... col....

1.	2.	$\sum$

1. Find sup for every par of elements



sup	1	2	3	4	5	6	7	8
1	1							
2	x	2						
3	x	x	3					
4	x	x	x	4				
5	x	x	x	x	5			
6	x	x	x	x	x	6		
7	x	x	x	x	x	x	7	
8	x	x	x	x	x	x	x	8

2. For $(x, y), (s, t) \in \mathbb{N}_+^2$ $(x, y) \preceq (s, t)$ iff $(x, y) = (s, t) \vee 2x + y \leq s$. Prove that $\preceq$ is a partial order. Draw the Hasse diagram for $(\{(x, y) : x, y \in \{0, 1, 2\}\}, \preceq)$.

3. For $(x,y),(s,t) \in \mathbb{R}^2$ let $(x,y)R(s,t) \Leftrightarrow \exists k \in \mathbb{Z}\ \lfloor x+y \rfloor + 2k = \lfloor s+t \rfloor$. Prove R is equivalence relation. Find equivalence class $[(a,b)]_R$. Draw $[(\frac{1}{3},\frac{1}{3})]_R$.