離散數學 HW8 20230107 資一 敏

1. $A=\{\{0,-2\},\{0,-1\},\{0,1\},\{1,-2\},\{1,-1\},\ldots,\{2,-2\},\{2,-1\},\{2,0\},\{2,1\}\}$

2 $\{x \mid x=2n+1 \wedge n\in N^+ \wedge \neg(\exists a)(\exists b)[a\in N^+ \wedge a\geq 2 \wedge b\in N^+ \wedge b\geq 2 \wedge x=ab]\}$

3. (1) $A=\{1\}$. $B=\{\{1\}\}$. $C=\{\{\{1\}\}\}$. $A\notin C$

(2) $A=\{1\}$. $B=\{\{1\}\}$. $C=\{\{\{1\}\},\{1\}\}$. $A\in C$

4. (1) 真 $A\in B$ 且 $B\subseteq C$. 則 $(\forall x)(x\in B\rightarrow x\in C)\Rightarrow A\in B\rightarrow A\in C\Rightarrow A\in C$

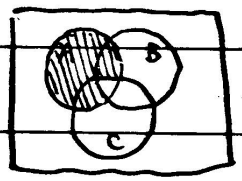
(2) 假 $A=\{1\}$. $B=\{\{1\}\}$. $C=\{\{\{1\}\}\}$ 則 $A\notin C$

5. (1) $\{\phi,\{a\},\{\{a\}\},\{a,\{a\}\}\}$

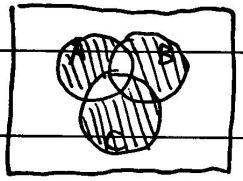
(2) $\{\phi,\{\phi\},\{a\},\{\{b\}\},\{\phi,a\},\{\phi,\{b\}\},\{a,\{b\}\},\{\phi,a,\{b\}\}\}$

(3) $P(P(\phi))\times P(P(\phi))=P(\{\phi\})\times P(\{\phi\})=\{\phi,\{\phi\}\}\times\{\phi,\{\phi\}\}=\{\langle\phi,\phi\rangle,\langle\phi,\{\phi\}\rangle,\langle\{\phi\},\phi\rangle,\langle\{\phi\},\{\phi\}\rangle\}$

7. (1)



(2)



(2) (1) $(B\cap C)-A$ (2) $(A\cap B\cap C)\cup -(A\cup B\cup C)$

9. (1) $A\cap B=\{1\}$

$-(A\cap B)=\{2,3,4,5\}$

(2) $P(A)=\{\phi,\{1\},\{4\},\{1,4\}\}$. $P(B)=\{\phi,\{1\},\{2\},\{5\},\{1,2\},\{1,5\},\{2,5\},\{1,2,5\}\}$

$P(A)-P(B)=\{\{4\},\{1,4\}\}$