(科目：离散)

数学作业纸

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1 (4) $A_4 = \{\{0,-2\},\{0,-1\},\{0\},\{0,1\},\{1,-2\},\{1,-1\},\{1,0\},\{1\},\{2,-2\},\{2,-1\},\{2,0\},\{2,1\}\}$

2 (4) $\{x \mid x\in N^* \wedge (\forall y)((y\in Z \wedge 2\le y<x)\rightarrow (x/y\notin Z)) \wedge x\ge 3\}$

3 令 $A=\{a\}$，$B=\{\{a\}\}$，$C=\{\{\{a\}\}\}$，则 $A\in B$，$B\in C$ 但 $A\notin C$.

4. 令 $A=\{a\}$，$B=\{\{a\}\}$，$C=\{\{\{a\}\},\{a\}\}$，则 $A\in B$，$B\in C$，$A\in C$.

6. (1) 真，$B\subseteq C \Leftrightarrow (\forall x)(x\in B\rightarrow x\in C)$ 由 $A\in B$ 知 $A\in C$.

(2) 假，令 $A=\{a\}$，$B=\{\{a\}\}$，$C=\{\{a\},b\}$，则 $A\in B$，$B\subseteq C$ 但 $A\notin C$.

(3) 假.

(4) 假

7 (2) $P(A)=\{\phi,\{\{1,\{2\}\}\}\}$

(3) $P(A)=\{\phi,\{\phi\},\{a\},\{\{b\}\},\{\phi,a\},\{\phi,\{b\}\},\{a,\{b\}\},\{\phi,a,\{b\}\}\}$.

(5) $P(P(\phi))\times P(P(\phi)) = \{\phi,\{\phi\}\}\times\{\phi,\{\phi\}\}$

$= \{<\phi,\phi>,<\phi,\{\phi\}>,<\{\phi\},\phi>,<\{\phi\},\{\phi\}>\}$.

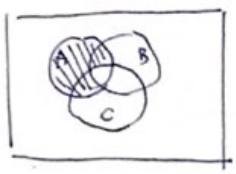
8. $P(P(P(\phi))) = \{\phi,\{\phi\},\{\{\phi\}\},\{\phi,\{\phi\}\}\}$.

(1) $\phi\in B$，$\phi\subseteq B$

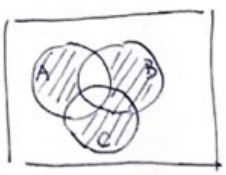
(2) $\{\phi\}\in B$，$\{\phi\}\subseteq B$

(3) $\{\{\phi\}\}\in B$，$\{\{\phi\}\}\subseteq B$

9 (2)



(3)



10. (1) $(B\cap C)-A$

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

数学作业纸

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11. (1) $\emptyset \cap \{\emptyset\} = \emptyset$

(2) $\{\emptyset, \{\emptyset\}\} - \emptyset = \{\emptyset, \{\emptyset\}\}$

(3) $\{\emptyset, \{\emptyset\}\} - \{\emptyset\} = \{\{\emptyset\}\}$

(4) $\{\emptyset, \{\emptyset\}\} - \{\{\emptyset\}\} = \{\emptyset\}$

12. (2) $(A \cap B) \cup -C$

$= \{1\} \cup \{1,3,5\}$

$= \{1,3,5\}$

(3) $-(A \cap B)$

$= -\{1\}$

$= \{2,3,4,5\}$

(5) $P(A) - P(B)$

$= \{\emptyset, \{1\}, \{4\}, \{1,4\}\} - \{\emptyset, \{1\}, \{2\}, \{5\}, \{1,2\}, \{1,5\}, \{2,5\}, \{1,2,5\}\}$

$= \{\{4\}, \{1,4\}\}$