CS 173, Fall 2015 Examlet 3, Part B		NI	ETI	D:								
FIRST:						AST:						
Discussion:	Thursday	2	3	4	5	Friday	9	10	11	12	1	2

1. (4 points) Is this claim true? Give a concrete counter-example or briefly explain why it's true. For any sets A, B, and C, $(A \cup B) - C = A \cup (B - C)$.

2. (4 points) Check the (single) box that best characterizes each item.

If $x \in A - B$, then $x \in B$.	true for all sets A and B	true for some sets A and B	
Sets A and B are disjoin	t $A - B = B - A$ $A \cap B = \{\emptyset\}$	$A = \overline{B}$ $A \cap B = \emptyset$	

3. (7 points) In \mathbb{Z}_9 , find the value of $[5]^{38}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 8$.

CS 173, Fa Examlet 3,		NI	ETI	D:								
FIRST:						AST:						
Discussion:	Thursday	2	3	4	5	Friday	9	10	11	12	1	2
1. (4 points) $A \times (B \cap C) =$	$A = \{$ fox, tig	ger, v	volf,	eagle	$, cat \}$	<i>B</i> =	= {3,	4}	C	$f = \{6,$	7}	

 $|A \times (B \cup C)| =$

2. (4 points) Check the (single) box that best characterizes each item.

$A \times B = B \times A$	true for all sets A and B true for some sets A and B	false for all sets A and B
$\emptyset\subseteq A$	true for all sets A	true for some sets A

3. (7 points) In \mathbb{Z}_{11} , find the value of $[7]^{38}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 10$.

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1. (4 points) Is this claim true? Give a concrete counter-example or briefly explain why it's true. For any sets A, B, and C, if $A \subseteq B$ then $A \times C \subseteq B \times C$.

2. (4 points) Check the (single) box that best characterizes each item.

$A \cup B = A$	true for all so true for some	ets A and B e sets A and B		false for a	all sets A and B	
$\emptyset imes \emptyset =$	Ø	{Ø}	$\{\emptyset, \emptyset\}$		$\{(\emptyset, \emptyset)\}$	

3. (7 points) In \mathbb{Z}_{11} , find the value of $[7]^{40}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 10$.

CS 173, Fa Examlet 3,		NI	ETI	D:								
FIRST:					\mathbf{L}_{I}	AST:						
Discussion:	Thursday	2	3	4	5	Friday	9	10	11	12	1	2
1. (4 points) $(A \cap C) \times B =$	$A = \{4, 5, 9\}$		1	B = {	arya	bran}	С	= { 2	,4,10	}		

 $|A \times B \times C| =$

2. (4 points) Check the (single) box that best characterizes each item.

$\{13, 14, 15\} \times \emptyset =$	Ø	$\{\emptyset\}$	{13, 14, 15}
$\emptyset \in A$	true for all sets A false for all sets A		true for some sets A

3. (7 points) In \mathbb{Z}_{13} , find the value of $[7]^{19}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 12$.

CS 173, Fa Examlet 3,		NI	ETI	D:]			
FIRST:						AST:						
Discussion:	Thursday	2	3	4	5	Friday	9	10	11	12	1	2
1. (4 points) $\emptyset \times B =$	$A = \{ apple, $	lemo	n}		<i>B</i> =	$\{4, 5, 9\}$		$C = \{$	appl (appl	e,4), ((5, ler)	non) }

 $(A \times B) \cap C =$

2. (4 points) Check the (single) box that best characterizes each item.

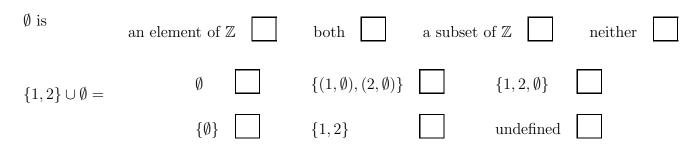
$ A \cup B = A + B $	true for all sets A false for all sets A	true for some sets A
$A \times B = A$	true for all sets A and B true for some sets A and B	false for all sets A and B

3. (7 points) In \mathbb{Z}_{11} , find the value of $[8]^{37}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 10$.

CS 173, Fa Examlet 3		NI	ETI	D:									
FIRST:						AST:							
Discussion:	Thursday	2	3	4	5	Friday	9	10	11	12	1	2	
1. (4 points) $A \times B =$	$A = \{$ water, b	eer, v	wine}	ł	Ε	$B = \{ \operatorname{cup}, \operatorname{m}\}$	ug}		$C = {}$	{wine,	(wat	er, bee	er)}

 $A \cap C =$

2. (4 points) Check the (single) box that best characterizes each item.



3. (7 points) In \mathbb{Z}_{13} , find the value of $[7]^{21}$. You must show your work, keeping all numbers in your calculations small. You may not use a calculator. You must express your final answer as [n], where $0 \le n \le 12$.