FIRST:					LAST	Γ:						
Discussion:	Monday	9	10	11	12	1	2	3	4	5		
1. (5 points) Let remainder r of											quotien	t q and th
	J				1							
2. (6 points) Use	the Euclidean	algori	thm to	com	pute gcc	d(118	3,351	1). Sł	now y	our	work.	
3. (4 points) Chec	k the (single) l	oox th	at best	chai	racterize	s eac	h itei	n.				

FIRST:					LAST	Γ:						
Discussion:	Monday	9	10	11	12	1	2	3	4	5		
1. (5 points) Is the showing that it		m tru	ie? Info	ormal	ly expla	in wh	y it i	s false	e, or g	give a	concre	te exampl
	in integer n such	h tha	$t n \equiv 5$	5 (mo	d 6) and	$d n \equiv$	€6 (r	nod 7	·)?			
	Ü				,				,			
2. (6 points) Wr	ite pseudocode	(itera	ative o	r recu	rsive) fo	or a f	uncti	on go	$\mathrm{cd}(\mathrm{a,l})$	o) tha	ıt impl	ements th
	ite pseudocode rithm. Assume					or a f	uncti	on go	${ m cd}({ m a},{ m l}$	o) tha	t impl	ements th
						or a f	uncti	on go	${ m cd}({ m a,l}$	o) tha	t impl	${ m ements} \ { m th}$
						or a f	uncti	on go	${ m cd}({ m a,l})$	o) tha	t impl	ements the
						or a f	uncti	on go	ed(a,l	o) tha	t impl	ements the
						or a f	uncti	on go	ed(a,l	o) tha	t impl	ements the
						or a f	uncti	on go	$\mathrm{cd}(\mathrm{a,l}%)=\mathrm{cd}(\mathrm{a,l}%)$	o) tha	t impl	ements th
						or a f	uncti	on go	${ m cd}({ m a,l}$	o) tha	t impl	ements th
2. (6 points) Wr Euclidean algo						or a f	uncti	on go	cd(a,l	o) tha	t impl	ements the
	rithm. Assume	both	inputs	are p	ositive.				ed(a,l	o) tha	t impl	ements the
Euclidean algorates and the Euclidean algorates algorates and the Euclidean algorates	rithm. Assume	both box tl	inputs	are p	ositive.				ed(a,l	o) tha	t impl	ements the

CS 173, Sp Examlet 2		$6\sqrt{N}$	ETII	D:								
FIRST:					LAS	Γ:						
Discussion:	Monday	9	10	11	12	1	2	3	4	5		
1. (5 points) Is t			true?]	Inform	nally ex	plain	why	it is,	or g	ive a c	oncrete co	unte
	ositive integers		p, q, if	$s \equiv t$	\pmod{p}	o) and	$d p \mid q$	q, the	en s≡	≡ t (mo	od q).	
2. (6 points) Use	the Euclidean	algor	rithm t	o com	pute gc	d(160	9,56	3). S	how y	your wo	ork.	
3. (4 points) Chec	ek the (single)	box t	hat bes	st chai	racteriz	es eac	ch ite	m.				
$k \equiv -k \pmod{k}$	k) alwa	ays		som	netimes			neve	r			
7 0	true		false									

CS 173, S _I Examlet 2		$6\sqrt{N}$	ETII):								
FIRST:					LAS	Γ:						
Discussion:	Monday	9	10	11	12	1	2	3	4	5		
1. (5 points) Is example showi	the following cl		true? l	Inform	nally ex	plain	why	it is,	or g	ive a	concrete	counter
_	or all natural nu		rs $a, b,$	and c	if $ac \mid b$	c, th	en a	b.				
2. (6 points) Use	e the Euclidean	algor	rithm to	o com	pute gc	d(101	12,299	9). Sl	how :	your w	ork.	
, <u>-</u>						`	·	,				
3. (4 points) Che	ck the (single) l	box t	hat bes	st char	racterize	es eac	ch ite	m.				
For any integer	$p = p \text{ and } q$, if $p \mid q$	q then	$n p \le q$	t	crue		f	alse				
$\gcd(0,0)$	0	k		-	undefine	ed						

FIRST:					LAS	Γ:						
Discussion:	Monday	9	10	11	12	1	2	3	4	5		
1. (5 points) Is example showing	the following cl		rue? l	Inform	nally ex	plain	why	it is,	or g	give a	concrete	coun
Claim: For $gcd(a, c) = 0$	or all positive in a second control or all positive in a second co	intege	ers a, l	b, and	c, if g	$\mathrm{cd}(a,b)$	bc) =	= 1, t	hen	$\gcd(a$	$(a,b) = 1 \ a$	and
2. (6 points) Use	the Euclidean	algor	ithm to	o com	pute gc	d(156	8, 540	6). Sł	now ;	your v	vork.	
3. (4 points) Che	ck the (single)	oox tl	nat bes	st cha	racterize	es eac	h itei	n.				