Name:												
NetID:			_	Lecture:			\mathbf{A}	В				
Discussion:	Thursday	Friday	9	10	11	12	1	2	3	4	5	6
, - ,	Is the following owing that it is n		Info	rmally	explair	n why	it is,	or gi	ve a	conci	ete c	counter-
Claim	: For all non-zero	integers a	and b ,	if $a \mid b$	and b	$\mid a, \text{ th}$	nen a	= b.				
2. (6 points)	Use the Euclidean	n algorithm	to co	mpute	$\gcd(20$	015, 83	7). Sł	now y	our v	work.		
3. (4 points) (Check the (single)) box that b	est ch	ıaracteı	rizes ea	ach ite	m.					
0 0		true [fals	e]						
_	we integers p and q d only if $gcd(p,q)$	-	ely	true		1	false					

Name:												
NetID:			_	$L\epsilon$	ecture	e :	\mathbf{A}	В				
Discussion:	Thursday	Friday	9	10	11	12	1	2	3	4	5	(

1. (5 points) Is the following claim true? Informally explain why it is, or give a concrete counterexample showing that it is not.

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Claim: For all positive integers a, b, and c, if gcd(a,b) = n and gcd(a,c) = p, then gcd(a, bc) = np.

2. (6 points) Use the Euclidean algorithm to compute gcd(1609, 563). Show your work.

3. (4 points) Check the (single) box that best characterizes each item.

For any positive integers p and q, false true if lcm(p,q) = pq, then p and q are relatively prime.

 $(5 \times 5) \equiv 1 \pmod{6}$ false true

Name:												
NetID:	_	Le	ctur	e :	A	В						
Discussion:	Thursday	Friday	9	10	11	12	1	2	3	4	5	6
,	Is the following owing that it is n		Info	rmally	explair	n why	it is,	or gi	ve a	concr	ete c	ounter-
Claim:	For all positive	integers a, b	, and	c , $\gcd($	(ca, cb)	$= c \cdot \epsilon$	$\gcd(a,$,b)				
2. (6 points)	Use the Euclidean	n algorithm	to co	mpute	$\gcd(23)$	880, 39	1). Sh	now yo	our v	vork.		
3. (4 points) (Check the (single)	box that be	est ch	ıaracteı	rizes ea	ich ite	m.					
$25 \equiv 4 \pmod{mo}$	d 7) tru	ne	fals	e								

false

true

Two positive integers p and q are relatively

prime if and only if gcd(p,q) = 1.

Name:												
NetID:			_	Lecture:			\mathbf{A}	В				
Discussion:	Thursday	Friday	9	10	11	12	1	2	3	4	5	6
	Is the following owing that it is n		Info	rmally	explair	n why	it is,	or gi	ve a	conci	rete o	counter-
For an	y positive integer	rs $a, b,$ and a	c, if a	bc, th	nen $a \mid$	b or a	$\mid c$					
	Write pseudocoo					funct	ion go	cd(a,b) tha	at imp	pleme	ents the
Euclidean a	algorithm. Assum	ie both inpu	ts are	e positi	ve.							
3. (4 points) (Check the (single)) box that be	est ch	naracte	rizes ea	ach ite	m.					
2 -4		true		fals	se]						
r = remain							C-1					
then $gcd(a,$	$b) = \gcd(r, a)$			true		1	false					

If p, q, and k are primes,

then gcd(pq, qk) =

 $29 \equiv 2 \pmod{9}$

Name:												
NetID:			<u>-</u>	Lecture:			\mathbf{A}	В				
Discussion:	Thursday	Friday	9	10	11	12	1	2	3	4	5	6
1. (5 points) q are relative	Explain how to uvely prime.	se the Euclid	lean	algoritl	nm to	test w	hethei	two ;	posit	ive in	teger	p and
2. (6 points)	Use the Euclidea	n algorithm	to co	mpute	$\gcd(17$	702, 12	21). S	Show ;	your	work		
3. (4 points) (Check the (single)	box that be	est ch	naracte	rizes ea	ach ite	m.					

false

 ${\rm true}$

pq pqk $q \gcd(p,k)$

 Name:______

 NetID:______
 Lecture: A B

Discussion: Thursday Friday 9 10 11 12 1 2 3 4 5 6

1. (5 points) For any real numbers x and y, let's define the operation \oslash by the equation $x \oslash y = x^2 + y^2$. Is the following claim true? Informally explain why it is, or give a concrete counter-example showing that it is not.

Claim: For any real numbers x,y, and z, $(x \oslash y) \oslash z = x \oslash (y \oslash z)$

2. (6 points) Use the Euclidean algorithm to compute gcd(2737, 2040). Show your work.

3. (4 points) Check the (single) box that best characterizes each item.

 $\gcd(p,q) = \frac{pq}{\operatorname{lcm}(p,q)}$ (p and q positive integers) always sometimes never

 $-3 \equiv 3 \pmod{4}$ true false