Due at the beginning of class on the day of Test 1

Direction: Solve the problems in this worksheet on separate sheets of paper. Write your solution neatly. Use standard size paper. Clearly label each problem, and include each problem in the correct order. No ragged edges. Staple multiple pages. At the top of the first page put your name, Math 2414, and the title of the worksheet. Show all work to justify your answer. Answer with insufficient work will receive no credit.

]	Pro	blen	n 1:	: Al	oply	y th	e di	isk	met	hoc	l-re	volv	ze a	bou	it x .	-axi														
]	Find	the	vol	ume	of	the	solic	l for	med	by	revo	olvir	ıg tł	ie re	egior	ı bo	und	ed b	y th	ne gi	ven	gra	$^{\mathrm{ohs}}$	abo	ut tl	he x	-axi	5		
	1	11 =		1	11 :	- 0	r =	0	r =	3			Ĩ						Ĩ											
	1.	9	$\sqrt{3}$	3x+5	, 9	0,	a la	0, .		0.																				
	2.	<i>y</i> =	$= e^x$	$^{/4}, y$	=	0, x	= 0	, x =	= 6.																					

\mathbf{Pro}	bler	n 2	: Al	pply	$7 ext{ th}$	e di	sk 1	\mathbf{met}	hoc	l-re	volv	ze a	ιb <mark>οι</mark>	it y	-axi	s													
Find	$1 ext{ the}$	vol	lume	of	the	solid	l for	med	by	revo	olvir	ng tl	ne re	egioi	ı bo	und	ed b	y th	ie gi	ven	gra	$^{\mathrm{ohs}}$	abo [.]	ut tl	he y	-axi	\mathbf{s}		
1	r =	= 2	171 /	r =	0 11	= 9			, i									-							Ť				
		-1	/ 9, ·		\sim, g																								
2.	. <i>y</i> =	= 3(z — :	x), z	<i>y</i> =	0, x	= 0	•																					

Pr	ob	oler	n 3	: AI	oply	y th		ash	er n	netl	hod																		
Fin	ıd	$_{\mathrm{the}}$	vol	ume	of	the	solid	for	med	by	revo	olvir	ıg tł	ne re	gior	ı bo	und	ed b	y th	ie gi	ven	gra	$^{\mathrm{ohs}}$	abo	ut tl	he x	-axi	s	
	1	11 =	$= r^2$	<i>11</i> =	= 41	r _ c	r^2																						
		9	w 7	, 9 -	10	1			0		0																		
	Ζ.	<i>y</i> =	= √:	x, y	= -	$\frac{1}{2}x$	+4,	<i>x</i> =	= 0,	x =	8.																		

	Pro	blen	n 4	Re	evol	lve a	abo	ut a	a lin	le tl	hat	is r	not	a co	oord	lina	te a	axis												
-	Find	the	vol	ume	of	the	solid	l for	·med	l by	revo	olvir	ig t	he re	gior	ı bo	und	ed b	y tł	ne gi	ven	gra	$^{\mathrm{ohs}}$	abo	ut tl	he g	iven	line	:	
	1	21 -	2	_ 1	— (r	- 0	r -	- 4 :	ahor	ıt th	e lii	ne a	u - 4					-											
	1.	9	1+	x, 9	0	ο, ω	1	a -	0 1			1.	10 2	9 1																
	2.	xy	= 1	, y =	= 0,	<i>x</i> =	1, :	x =	2 at	out	the	line		=	_															

Pro	ble	m 5:	Re	evol	ve a	abo	ut a	a lin	le tl	nat	is n	ot a	a cc	orc	lina	te a	axis												
Set	up (but	do	not	ev	alua	ate)	the	inte	egra	l to	find	$_{\mathrm{the}}$	vol	ume	of	$_{\mathrm{the}}$	solid	l for	med	bv	reve	olvir	ng t	he r	egior	ı bo	und	ed
by t	he g	given	gra	$_{\rm phs}$	abo	ut t	he ۽	giver	line	Э											-0			0		0			
1	. y :	= sir	$\mathbf{n}(x)$	<i>y</i> =	= cos	s(x)	, 0 <	$\leq x \geq$	$\leq \pi$	$^{\prime}4, \mathrm{a}$	bou	t th	e lin	ne y	= -	1.													
2	x	$= u^4$. <i>x</i> =	= 11	abo	ut tl	he li	ne <i>a</i>	1																				
		9	,	9		10 01																							

Pro	bler	n 6:	Vo	olun	ne o	of so	olid	wit	$\mathbf{h} \mathbf{g}$	ive	ı cr	oss	sec	tior	ıs															
Find	$_{\mathrm{the}}$	voli	ıme	of t	the s	solid	wh	ose	base	is t	he r	egio	n bo	bund	led	oy tl	he c	ircle	x^2 .	$+ y^{2}$	= 4	1 and	d an	d w	hose	cro	SS S	ectio	${ m ns}$	
perp	endi	icula	r to	the	e x-a	\mathbf{x} is	are	equi	ilate	ral 1	riar	igles				v				Ū										
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											x	\succ	2			2	-	y												

	Prol	oler	n 7	· Vo	lun	ne c	of so	olid	wit	h g	ive	n cı	\mathbf{oss}	\mathbf{sec}	tior	ıs															
	Find	$ h\epsilon$	vol	ume	e of	$_{\mathrm{the}}$	soli	d wl	nose	bas	e is	the	reg	ion	bou	ndeo	l by	the	cur	ves	y =	x +	-18	ind	y =	x^2 .	- 1	and	who	ose	
(cross	sec	tion	s pe	rpe	ndic	ular	to	the :	x-ax	is a	re r	ecta	ngle	s of	heig	1 ght 1				Ŭ										
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	\mathbf{Prol}	bler	n 8	: Vo	olun	ne o	of so	olid	wit	h g	iver	ı cr	oss	sec	tion																
	The	bas	e of	as	olid	is	the	tria	ngul	ar r	egio	n ir	h th	e xı	/-pla	ne	with	ve	rtice	s (0	, 0),	(1.	0) a	and	(0, 1)	1).	Cro	ss-se	ectic	ons	
_	perp	endi	cula	ar to	o the	e y-e	ixis	are	squa	ares.	Fin	ıd tł	ne v	olun	ne of	fthe	e sol	id.			,										