## Due at the beginning of class on the day of the Final Exam

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	bler	n 1:	Pl	ot p	oin	ts v	$\mathbf{vith}$	giv	ven	pol	ar (	<b>:00</b>	rdin	ate											
Plot	the	poi	nts v	$_{\rm vhos}$	e p	olar	$\cos$	rdin	ates	are	giv	$\mathbf{en}$													
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1.	(8,	$\pi/2$	)				2	. (7	$, 5\pi$	/4)					3. (	1, -	$3\pi/$	4)		4.	(-2)	$, 5\pi$	/3)		

Pro	obl	len	1 <b>2</b> :	Р	olar-	to-	Rec	tan	gul	ar (	Con	$\mathbf{vers}$	ion																	
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Pro	bler	n 3	Re	ecta	ngu	lar-	to-]	Pol	ar (	Con	vers	sion																	
Plot	the	poi	nt w	hose	e rec	etan	gula	r cc	ordi	nate	es ai	re gi	iven	and	finc	l th	e co	rres	pone	ling	pola	ar ce	oorc	linat	tes f	or t	he p	oint	
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Р	roblem	4: Pl	ot a p	oolar	cur	ve															
Sł	tetch the	e follov	ving c	irves	:																
		2					π			0			0					(2.0	`		
	1. $r =$	2			2	2. θ	$=\frac{\pi}{6}$			3. r	. + 2	$2\cos$	θ		4.	r =	4 sir	$1(3\theta)$	)		

Pro	bler	n 5	c Co	onve	ert	bety	wee	n p	olar	eq	uat	ions	an an	d r	ecta	ngı	ılar	equ	ıati	ons							
Conv	vert	the	pola	ar eo	quat	ion	to a	rec	tang	ular	eq:	iatio	on a	nd	ident	ify	$_{\rm the}$	$\operatorname{curv}$	e.								
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1.	<i>r</i> =	= 3 s	$ in \theta $							2.	r =	$3  \mathrm{sec}$	cθ						•	3. r	= se	$ec \theta$ 1	tan t	)			

I	Prol	bler	n 6	: Ta	nge	$\mathbf{nt}$	line	s to	o po	lar	cur	$\mathbf{ves}$																		
	1.	Fir	nd <i>d</i>	y/d	x an	ld tl	ne sl	ope	of t	the 1	ang	ent	line	to 1	the	grap	h of	f r =	= 2 -	+3s	$\sin  heta$	at	the	poin	ts w	vher	$\theta$	$=\pi$	/2 a	nd
		θ =	= π.	• /				-								-								Ī						
	2.	Fir	nd ti	he p	oint	s on	the	e po	lar o	urv	e r =	= 1 ·	– sir	nθv	vher	e th	e ta	nger	nt li	ne is	hoi	rizoi	ntal	or v	erti	cal.				
	3.	Fir	nd t	he p	oint	s on	the	po	lar o	urv	e <i>r</i> =	= 1 -	+ co	sθτ	when	e th	e ta	ngei	nt li	ne is	s ho	rizo	ntal	or v	erti	cal.				
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