Due at the beginning of class on the day of Test 2

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 2320, and the title of the homework assignment. Show all work to justify your answer. Answer with insufficient work will receive no credit.

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1	unc	tion	f(x)	;)																											
	1.	f(x) =	xe^4	1 x											2. j	f(x)	= x	\cos	(x).											

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	Pro	bleı	n 3	: Fi	nd [Lap	lace	e Tr	ans	forr	ns o	of f	unc	tion	s u	\mathbf{sing}	Ta	ble	and	ł Li	nea	rity								
-	Use	$_{\mathrm{the}}$	tabl	e of	bas	ic L	apla	ce t	rans	forn	ns a:	nd l	inea	rity	pro	pert	y to	fine	l the	e La	plac	e tr	ansf	orm	of	the	func	tion		
					1						0	e ()			A r							<i>/</i>		2		(0)				
	1.	f(:	x) =	2x	Ī						3.	f(x)) = .	1 + 0	210					ц.). f	(x)	=4x	;" —	$5 \mathrm{S1}$	n(3:	r)			
	2.	f(:	x) =	(x	+1)	3					4.	f(x)) =	(1 +	e^{2x}	$)^{2}$				6	5. <i>f</i>	(x)	$=x^4$	- <i>x</i>	$c^{2} -$	<i>x</i> +	$-\cos$	$(\sqrt{2})$	x)	

Problem 4: Find Laplace Transforms of functions using Table and Linearity

-	First	use	a t	rig i	dent	tity,	and	the	n us	e th	e ta	ble	of b	asic	Lap	lace	tra	nsfo	rms	and	line	arit	y pr	opei	rty t	o fii	nd tl	he L	apla	ice	
1	rans	forr	n of	the	fun	ctio	n:																								
	1.	f(z)	r) =	e^x	sinh	(x)					2.	f(x)) = s	sin(2	$(x) \in \mathbb{R}^{2}$	$\cos(2$	(x)				R f	(r)	- 10		(r)	π					
		J (-)			(~)						, (~ ,					~)				<i>.</i>	(2)	- 10	1005	("	6)				
	Hint	Fo	r pa	rt 1	use	the	defi	initi	on o	f sir	h(x)). F	or p	art	2 us	e th	e do	uble	e-an	gle i	den	tity.	For	par	rt 3	use	the	$\cos i$	ne o	fа	
	liffer	enc	e fo	rmu	la.																										

i	Prol	blem 5	: Fi	\mathbf{rst}	Tra	nsla	atio	n T	heo	ren																			
	1.	Read	and	expl	lain	$_{\mathrm{the}}$	proc	of of	Th	eore	m~7	.3.1	(Pg	271) in	the	boo	k: i	${ m f} {\mathscr L}$	$\{f(:$	$x)\}$:	= F	(s),	the	n				
												0		f	Ń	$\mathbf{F}($				CV X	/ /								
												Z	{e	$\int (x)$)} =	- F (<u>s</u> –	<i>a</i>).											
	2.	Apply	the	the	oren	n an	d th	le ta	ble	of b	asic	Lap	lace	tra	nsfo	rms	to	\cos	e up	wit	h th	le fo	rmu	ıla f	or:				
		(a)		ıx,	n (hr	11	(b)	Ø	ax	000	hr	(م ا م ^ر	$x_{+}n$	1		(4)	Ø	ax	ainh	(hr)			e í a	ax o	ah(i	(m)]	
		(a) -	e (e	SII	1(0x))}	(b)		e	cos((x)	(() Z	f le	l.	}		(u)	21	e	siin	(ox)	13 (e) -	e (e	C	sn(a	x)	