Implementing FFT in Excel

You can do this using the menu tools in Excel

It is an alternative to the Macro developed for the class

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FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT

C1		- :)	X 🗸	$f_x = c$	OS(B1*4)															
	А	В	С	D	E	F	G	Н	1	J	к	L	м	N	0	Р	Q	R	S	
1	1	0.012272	0.998795																	
2	2	0.024544	0.995185																	
3	3	0.036816	0.989177																	
4	4	0.049087	0.980785																	
5	5	0.061359	0.970031																	
6	6	0.073631	0.95694																	
7	7	0.085903	0.941544																	
8	8	0.098175	0.92388			oro I	havo	croat	od a	cocin	o fun	ction	inct	likov		ro ac	kad t	o do		
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12	12	0.147262	0.83147		E Fu	inctic	n of	the r	ange	$0 t_0$	2 Pi									
13	13	0.159534	0.803208			metre			unge	0.10	∠ .									
14	14	0.171806	0.77301																	
15	15	0.184078	0.740951																	
16	16	0.19635	0.707107																	
17	17	0.208621	0.671559																	
18	18	0.220893	0.634393																	
19	19	0.233165	0.595699																	
20	20	0.245437	0.55557																	
21	21	0.257709	0.514103																	
22	22	0.269981	0.471397																	
23	23	0.282252	0.427555																	
24	24	0.294524	0.382683																	
25	25	0.306796	0.33689																	
26	26	0.319068	0.290285																	
27	27	0.33134	0.24298																	
28	28	0.343612	0.19509	+																
	(}	Sheet1	•																	

Book2 - Excel

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Book2 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT

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2	1 0.012272	0.998795	- <u> </u>	0 3 .0 •											
2	2 0.024544	0.995185 -0.0	Cut												
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5	5 0.061259	0.9807851 -	<u>С</u> ору	_											
6	6 0.073631	0.95694	Paste Options:												
7	7 0.085903	0.941544					_							_	
8	8 0.098175	0.92388 -	Paste Special	E Pacto			low r	baste	the r	าumb	ers ir	n colu	ımn (
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10	10 0.122718	0.881921 -	Insert	□ _f _x	%f _x <u>₹</u>	l I I	nto co	olum	nDu	singi	the P	aste S	speci	ai	
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13	13 0.159534	0.803208 - 🚈	Quick Analysis			n	nonu	choid	co (lo	ft ma	nct ice	nn)			
14	14 0.171806	0.77301 -	Filter	123 123	123	11	lenu	CHOI				JIIJ.			
15	15 0.184078	0.740951 -	Cort	Othe	e Options	Т	his m	neand	that		mn Γ) inst	conta	ains	
16	16 0.19635	0.707107 -	5 <u>0</u> ft	- 👶 🗎			1115 11	icans	, that	coru		just	conte		
17	17 0.208621	0.671559	Insert Co <u>m</u> ment			n	umb	ers w	vith n	o ref	erend	ces to	the		
18	18 0.220893	0.634393 - 📰	<u>F</u> ormat Cells	Paste S	pe al					0 1 0 1			the		
19	19 0.233165	0.595699 -	Pic <u>k</u> From Drop-down List			0	ther	colur	nns.						
20	20 0.245437	0.55557 -	Define Name												
21	21 0.257709	0.514103 -	Hyperlink												
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23	23 0.282252	0.427555 -0.13	3897												
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28	27 0.55134	0.19509 0.710	0659												
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FILE

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HOME INSERT PAGE LAYOUT FORMULAS

• : $\times \, \checkmark \, f_x$ 0.998795456205172

	А	В	С	D	Е	F	G	Н	I.	J	К	L	М	N	0	P	Q	R	S		
1	1	0.012272	0.998795	0.998795																	
2	2	0.024544	0.995185	0.995185																	
3	3	0.036816	0.989177	0.989177																	
4	4	0.049087	0.980785	0.980785																	
5	5	0.061359	0.970031	0.970031																	
6	6	0.073631	0.95694	0.95694																	
7	7	0.085903	0.941544	0.941544							Vou con varify the column Disidentical										
8	8	0.098175	0.92388	0.92388							You ca	in vei	rity tr	ne co	lumn	DIS	ident	ical			
9	9	0.110447	0.903989	0.903989							I.										
10	10	0.122718	0.881921	0.881921								umn	L. HO	weve	er, coi	umn	C STII	1			
11	11	0.13499	0.857729	0.857729								former	بام مم		tod.	. <i>.</i> :+6 ;	+ I£.,				
12	12	0.147262	0.83147	0.83147							las a	IOLUI	lia as	SOCI	ilea v	NILLI	ι. ΙΙ γ	ou			
13	13	0.159534	0.803208	0.803208							calculate the FFT on column C it will be										
14	14	0.171806	0.77301	0.77301																	
15	15	0.184078	0.740951	0.740951																	
16	16	0.19635	0.707107	0.707107							very s		ince i		need						
17	17	0.208621	0.671559	0.671559							recalc	ulate	the f	ormi	ila fo	r eac	h				
18	18	0.220893	0.634393	0.634393							ccuic	ulute	the i	OTTIC		i cuc					
19	19	0.233165	0.595699	0.595699							opera	tion.									
20	20	0.245437	0.55557	0.55557																	
21	21	0.257709	0.514103	0.514103																	
22	22	0.269981	0.471397	0.4/1397																	
23	23	0.282252	0.427555	0.427555																	
24	24	0.294524	0.382683	0.382683																	
25	25	0.300796	0.33089	0.33689																	
20	20	0.319068	0.290285	0.290285																	
27	27	0.33134	0.24298	0.24298																	
281	28	0.343612	0.19209	0.195091																	

Book2 - Excel

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Book2 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT

D1		f_x 0.9	987954562	205172														
	A B C	D	E	F	G	н	I.	J	К	L	м	N	0	P	Q	R	S	
1	1 0.012272 0.998795	0.998795																
2	2 0.024544 0.995185	0.995185																
3	3 0.036816 0.989177	0.989177																
4	4 0.049087 0.980785	0.980785																
5	5 0.061359 0.970031	0.970031																
6	6 0.073631 0.95694	0.95694							-+ F		۸ I.							
7	7 0.085903 0.941544	0.941544						Sele		Irler	Anaiy	ysis II	า					
8	8 0.098175 0.92388	0.92388						tha l	Data	۸ malı	icic m							
9	9 0.110447 0.903989	0.903989						the	Data	чпату	/515 11	ienu.						
10	10 0.122718 0.881921	0.881921																
11	11 0.13499 0.857729	0.857729																
12	12 0.147262 0.83147	0.83147								Data A								
13	13 0.159534 0.803208	0.803208								Data A								
14	14 0.171806 0.77301	0.77301						<u>A</u> nalysis T	ools									
15	15 0.184078 0.740951	0.740951						F-Test Tw Fourier A	o-Sample for nalysis	Variances								
16	16 0.19635 0.707107	0.707107						Histogram	n									
17	17 0.208621 0.671559	0.671559						Random	werage Number Gene	ration			<u>H</u> elp					
18	18 0.220893 0.634393	0.634393						Rank and	Percentile									
19	19 0.233165 0.595699	0.595699						Sampling	on I									
20	20 0.245437 0.55557	0.55557	·					t-Test: Pa	ired Two Sam	ple for Mear	15 L Varian coc	5						
21	21 0.257709 0.514103	0.514103						t-rest; iw	o-sample Ass	uming Equa	i variances	•						
22	22 0.269981 0.471397	0.471397																
23	23 0.282252 0.427555	0.427555																
24	24 0.294524 0.382683	0.382683																
25	25 0.306796 0.33689	0.33689																_
26	26 0.319068 0.290285	0.290285																_
27	27 0.33134 0.24298	0.24298																_
28	28 0.343612 0.19509	0.19509																
	Sheet1 (+)																	

Book2 - Excel

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HOME PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT INSERT

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D1 fx 0.998795456205172 Ŧ

	A	В	C	D	E
1	1	0.012272	0.998795	0.998795	
2	2	0.024544	0.995185	0.995185	
3	3	0.036816	0.989177	0.989177	
4	4	0.049087	0.980785	0.980785	
5	5	0.061359	0.970031	0.970031	
6	6	0.073631	0.95694	0.95694	
7	7	0.085903	0.941544	0.941544	
8	8	0.098175	0.92388	0.92388	
9	9	0.110447	0.903989	0.903989	
10	10	0.122718	0.881921	0.881921	
11	11	0.13499	0.857729	0.857729	
12	12	0.147262	0.83147	0.83147	
13	13	0.159534	0.803208	0.803208	
14	14	0.171806	0.77301	0.77301	
15	15	0.184078	0.740951	0.740951	
16	16	0.19635	0.707107	0.707107	
17	17	0.208621	0.671559	0.671559	
18	18	0.220893	0.634393	0.634393	
19	19	0.233165	0.595699	0.595699	
20	20	0.245437	0.55557	0.55557	
21	21	0.257709	0.514103	0.514103	
22	22	0.269981	0.471397	0.471397	
23	23	0.282252	0.427555	0.427555	
24	24	0.294524	0.382683	0.382683	
25	25	0.306796	0.33689	0.33689	
26	26	0.319068	0.290285	0.290285	
27	27	0.33134	0.24298	0.24298	
28	28	0.343612	0.19509	0.19509	
	4 6	Shoot1	(I) (I)		

Type in the input range, which is column D. Note that you should explicitly give the numbers and these must be a multiple of 2. I have used 512. The output range is in column F (my choice).

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Input Input Range: Labels in Firs Output options Output Rang New Worksh New Workbo	st Row ge: neet <u>P</u> ly: ook	Fourier A	analysis 3D\$512 2	OK OK Cancel Help			

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Book2 - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW ACROBAT

F1 \forall \exists \times \checkmark $f_x = 0$
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	А	В	с	D	E	F	G	н	1	J	к	L	м	N	0	Р	0	R	S	
1	1	0.012272	0.998795	0.998795		'n														
2	2	0.024544	0.995185	0.995185		Ő														
3	2	0.036816	0.989177	0.989177		0														
4	4	0.049087	0.980785	0.980785		0														
5	5	0.061359	0.970031	0.970031		° 255.69163	5788524+12	56132462	78187i											
6	6	0.073631	0.95694	0.95694		0	70002411													<u> </u>
7	7	0.085903	0 941544	0 941544		0														<u> </u>
8	8	0.098175	0.92388	0.92388		0														
9	9	0.110447	0.903989	0.903989		0														<u> </u>
10	10	0.122718	0.881921	0.881921		0														
11	11	0.13499	0.857729	0.857729		0														
12	12	0.147262	0.83147	0.83147		0		Ind	and t	hic ic	tha [Jouri	or tro	ncfor	m of	2 00	rfoct	cocin		
13	13	0.159534	0.803208	0.803208		0		function. If there is no noise and only one cosine then												
14	14	0.171806	0.77301	0.77301		Ó														
15	15	0.184078	0.740951	0.740951		Ó														
16	16	0.19635	0.707107	0.707107		Ó		the	re is	only a	one F	ourie	r cor	nnon	ent (one f	reque	oncv)		
17	17	0.208621	0.671559	0.671559		Ő				onny (ound		npon			requ	circy/	•	
18	18	0.220893	0.634393	0.634393		Ó														
19	19	0.233165	0.595699	0.595699		Ó														
20	20	0.245437	0.55557	0.55557		Ó														
21	21	0.257709	0.514103	0.514103		Ó														
22	22	0.269981	0.471397	0.471397		Ō														
23	23	0.282252	0.427555	0.427555		ō														
24	24	0.294524	0.382683	0.382683		ō														
25	25	0.306796	0.33689	0.33689		Ó														
26	26	0.319068	0.290285	0.290285		Ó														
27	27	0.33134	0.24298	0.24298		0														

Sheet1 (+)