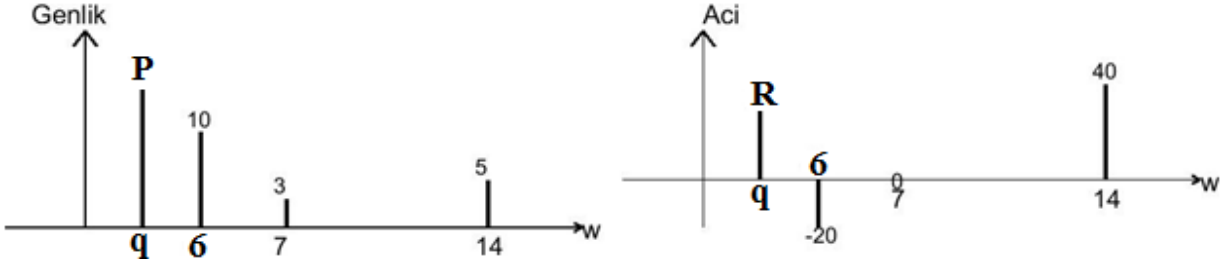


Haberleşme Sistemleri Ödev No 2

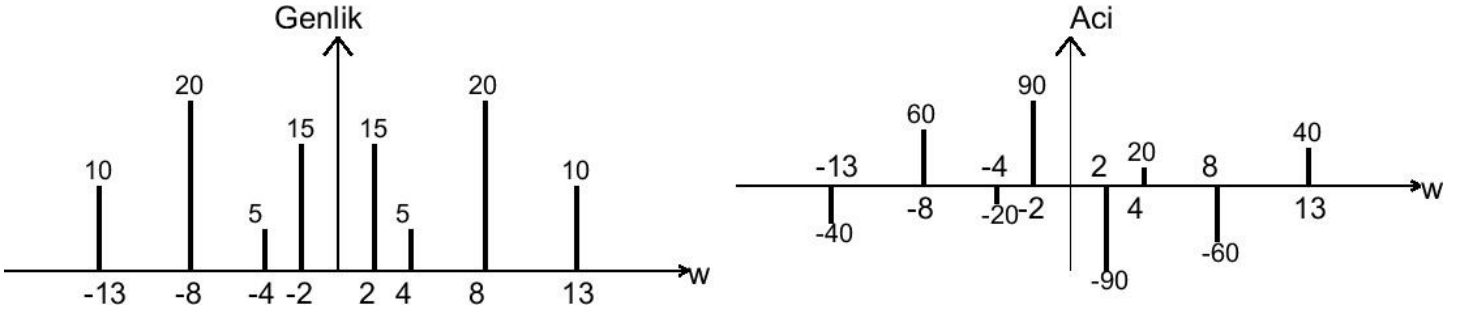
Ödevler el yazısı ile olacaktır.

1) $g(t) = A_1 \cos(B_1 t + C_1) + A_2 \cos(B_2 t + C_2) + A_3 \sin(B_3 t + C_3) + A_4 \sin(B_4 t + C_4)$ işaretinin tek taraflı ve çift taraflı spektrumunu çizin. ($A_1, B_1, C_1, A_2, B_2, \dots$) katsayıları dosyanın sonunda verilmiştir.

2) Şekilde tek taraflı spektrumu verilen ifadenin zaman bağılı ifadesi $g(t)$ nedir.



3) Şekilde çift taraflı spektrumu verilen ifadenin zaman bağılı ifadesi $g(t)$ nedir.



4) Şekildeki periyodik $g(t)$ işaretinin Fourier Serisi ve Kompleks Fourier Serisi katsayılarını hesaplayın. b) ilk 5 terimi alarak genlik ve açı spektrumunu çizin. (işaretin periyodu P_1 - P_2 arasındaki mesafedir. (Integrali 0 - T_0 arasında çözmeniz kolaylık sağlar.)

$$\begin{array}{c} g(t) \\ K \\ P_1 \quad Q_1 \quad P_2 \\ T_0 \end{array} \quad t$$

Listede Numarası olmayanlar 999 notu kullanacaklardır.

No	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	P	q	R	P1	Q1	P2	K
9999	14	-12	6	-12	20	10	25	40	80	-70	70	-50	10	3	60	-9	-5	3	10
18110011013	6	-10	8	-12	35	25	10	20	70	-90	30	-20	14	4	40	-8	-6	4	20
18110011032	14	-12	10	-16	15	45	40	25	80	-70	40	-50	8	2	80	-5	-1	2	10
19110011029	8	-4	10	-8	45	15	35	20	60	-70	70	-80	12	1	10	-7	-4	3	30
19110011032	12	-6	14	-16	30	25	45	40	90	-60	70	-80	16	5	20	-6	-2	3	40
19110011040	4	-10	12	-10	45	20	40	15	70	-20	80	-30	6	3	30	-9	-5	4	10
19110011054	8	-10	10	-16	20	30	45	15	60	-50	30	-90	4	4	40	-5	-1	5	40

19110011505	4	-6	12	-10	35	30	45	20	20	-80	30	-70	10	2	70	-9	-5	3	30
19110011509	4	-8	14	-18	45	15	35	30	80	-60	30	-20	14	1	50	-8	-6	4	10
20110011009	8	-12	6	-4	25	10	40	35	20	-60	50	-70	8	5	60	-5	-1	2	20
20110011018	8	-4	8	-12	10	15	20	45	50	-30	50	-50	12	3	40	-7	-4	3	10
20110011042	10	-6	14	-6	45	25	35	20	80	-60	70	-70	16	4	80	-6	-2	3	30
20110011044	12	-8	6	-12	30	20	35	45	90	-60	30	-70	6	2	10	-9	-5	4	40
20110011049	10	-6	14	-12	10	30	40	35	30	-20	70	-80	4	1	20	-5	-1	5	10
20110011054	10	-12	14	-6	45	25	15	40	80	-80	40	-50	10	5	30	-9	-5	3	40
21110011013	14	-12	6	-12	20	10	25	40	80	-70	70	-50	14	3	40	-8	-6	4	30
21110011021	8	-12	10	-12	25	35	30	15	90	-20	40	-80	8	4	70	-5	-1	2	10
21110011026	8	-10	8	-14	35	25	20	40	80	-40	40	-60	12	2	50	-7	-4	3	20
21110011029	10	-4	10	-18	30	45	25	15	70	-40	90	-30	16	1	60	-6	-2	3	10
21110011031	14	-8	14	-18	30	45	20	35	80	-40	30	-90	6	5	40	-9	-5	4	30
21110011034	8	-10	6	-14	30	45	25	35	30	-40	90	-50	4	3	80	-5	-1	5	40
21110011038	10	-6	14	-8	20	40	35	45	70	-80	30	-90	10	4	10	-9	-5	3	10
21110011069	14	-12	10	-12	20	45	30	15	90	-50	30	-90	14	2	20	-8	-6	4	40
21110032002	10	-8	6	-12	45	10	35	40	30	-90	60	-90	8	1	30	-5	-1	2	30
22110011004	8	-12	10	-6	30	35	20	40	80	-80	60	-30	12	5	40	-7	-4	3	10
22110011006	10	-10	14	-8	25	20	30	15	20	-40	90	-60	16	3	70	-6	-2	3	20
22110011008	14	-8	10	-16	45	15	30	35	40	-60	70	-60	6	4	50	-9	-5	4	10
22110011009	14	-4	14	-10	40	20	10	30	30	-70	70	-90	4	2	60	-5	-1	5	30
22110011011	14	-6	6	-18	20	15	45	35	90	-50	90	-30	10	1	40	-9	-5	3	40
22110011012	6	-12	14	-6	35	40	25	30	90	-70	20	-90	14	5	80	-8	-6	4	10
22110011013	6	-10	10	-14	45	30	40	15	40	-40	60	-80	8	3	10	-5	-1	2	40
22110011014	10	-12	8	-6	45	15	40	30	90	-80	30	-40	12	4	20	-7	-4	3	30
22110011015	10	-6	4	-14	10	15	45	40	80	-20	80	-80	16	2	30	-6	-2	3	10
22110011018	8	-8	6	-16	45	25	10	40	90	-90	40	-40	6	1	40	-9	-5	4	20
22110011019	14	-14	12	-8	10	35	20	45	80	-30	90	-90	4	5	70	5	11		10
22110011021	10	-10	12	-10	40	30	45	25	30	-30	80	-20	10	3	50	-9	-5	3	30
22110011022	8	-4	6	-14	35	45	15	10	40	-50	40	-50	14	4	60	-8	-6	4	40
22110011023	6	-4	12	-18	20	10	30	15	50	-60	80	-70	8	2	40	-5	-1	2	10
22110011024	8	-6	12	-14	30	25	15	40	40	-30	40	-20	12	1	80	-7	-4	3	40
22110011027	4	-6	10	-16	20	15	35	10	40	-50	20	-90	16	5	10	-6	-2	3	30
22110011028	10	-14	8	-10	45	40	15	35	80	-50	30	-80	6	3	20	-9	-5	4	10
22110011030	8	-14	6	-14	40	30	25	15	70	-80	70	-90	4	4	30	-5	-1	5	20
22110011031	14	-4	4	-14	45	20	15	30	50	-70	50	-60	10	2	40	-9	-5	3	10
22110011032	4	-12	10	-12	20	25	30	35	50	-60	30	-70	14	1	70	-8	-6	4	30
22110011033	6	-6	6	-18	40	25	20	45	80	-90	40	-90	P	q	R	-5	-1	2	40
22110011035	4	-8	14	-16	30	10	20	40	60	-50	20	-70	8	5	50	-7	-4	3	10
22110011038	10	-12	8	-14	20	45	30	15	30	-90	30	-80	12	3	60	-6	-2	3	40
22110011039	14	-10	8	-16	35	15	20	45	40	-80	30	-30	16	4	40	-9	-5	4	30
22110011043	8	-4	12	-16	20	30	40	35	90	-70	80	-60	6	2	80	-9	-5	3	10
22110011045	14	-6	10	-4	40	35	20	30	60	-70	50	-90	4	1	10	-8	-6	4	20
22110011048	8	-6	8	-6	10	25	15	40	60	-90	60	-20	10	5	20	-5	-1	2	10
22110011049	4	-4	14	-10	25	30	20	40	40	-50	50	-30	200	5	40	-7	-4	3	30
22110011050	12	-10	14	-8	40	30	45	25	20	-20	30	-50	600	5	40	-6	-2	3	40
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22110011301	6	-8	10	-6	40	10	45	20	30	-20	80	-30	500	4	40	-5	-1	5	40
22110011303	6	-10	14	-4	35	15	40	20	30	-40	90	-80	600	6	60	-9	-5	3	30

22110011312	8	-6	14	-6	20	30	35	40	60	-50	80	-90	500	3	50	-8	-6	4	10
22110011316	8	-4	6	-6	30	20	15	40	30	-70	70	-60	300	5	20	-5	-1	2	20
22110011322	14	-8	4	-6	45	20	10	30	50	-20	40	-50	900	4	60	-7	-4	3	10
22110011329	10	-10	12	-16	25	15	35	30	50	-20	70	-30	400	2	50	-6	-2	3	30
22110011334	14	-4	14	-10	45	25	30	35	80	-70	70	-90	700	3	60	-9	-5	4	40
22110011358	8	-12	10	-14	35	40	25	15	80	-90	40	-70	500	3	40	-9	-5	3	10
22110011360	6	-14	10	-16	40	30	20	35	50	-80	70	-50	900	5	50	-8	-6	4	40
22110011362	6	-10	8	-12	15	25	40	35	20	-70	40	-90	200	3	60	-5	-1	2	30
22110011363	6	-10	12	-16	30	10	25	40	50	-50	80	-40	900	2	30	-7	-4	3	10
22110011364	10	-12	12	-14	40	45	35	25	60	-40	40	-40	600	4	70	-6	-2	3	20
22110011367	10	-6	12	-6	25	40	15	35	60	-20	70	-40	300	4	60	-9	-5	4	10
22110011369	14	-6	6	-12	15	40	35	20	30	-80	40	-80	700	4	30	-5	-1	5	30
22110011370	12	-12	10	-16	15	10	40	35	80	-30	60	-50	600	3	40	-9	-5	3	40
22110011373	8	-8	12	-10	20	25	40	35	50	-90	70	-70	700	4	40	-8	-6	4	10
22110011396	6	-10	12	-6	20	30	15	40	70	-90	40	-90	500	4	70	-5	-1	2	40
22110011399	4	-8	8	-12	45	25	20	40	70	-30	30	-70	400	6	20	-7	-4	3	30
23110011009	12	-4	6	-14	15	35	30	25	90	-40	20	-30	300	5	30	-6	-2	3	10
23110011022	14	-8	8	-16	35	45	20	15	60	-20	50	-50	500	5	70	-9	-5	4	20
23110011046	8	-4	8	-4	40	20	25	30	50	-70	80	-40	900	4	40	-5	-1	5	10
23110011048	6	-12	10	-14	10	45	20	30	40	-30	60	-50	500	2	60	-9	-5	3	30
23110011302	14	-6	10	-18	30	25	35	20	50	-20	80	-90	500	6	50	-8	-6	4	40
23110011309	10	-6	6	-12	30	45	15	10	30	-40	30	-60	500	5	50	-5	-1	2	10
23110011803	10	-8	12	-18	15	25	30	20	90	-20	50	-20	900	6	60	-7	-4	3	40