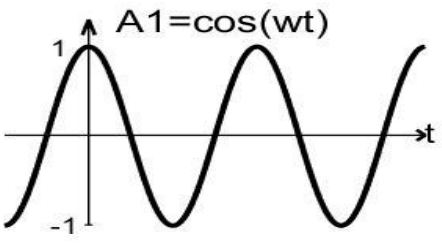
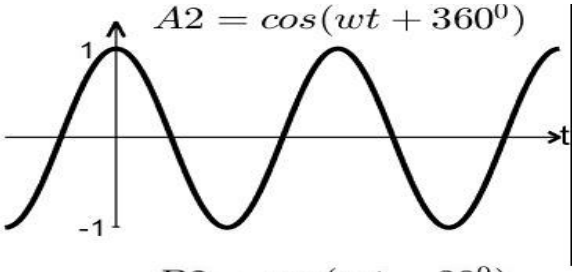
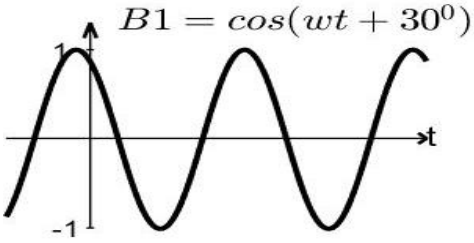
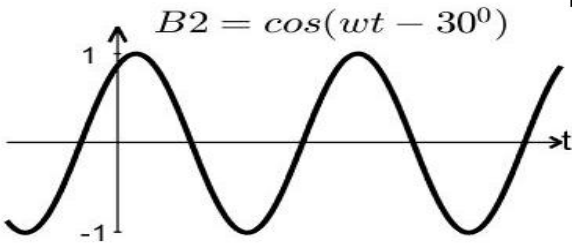
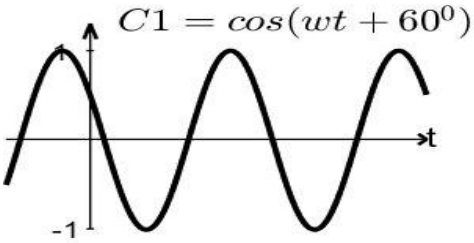
Pr241)Asagidaki Dalga sekillerini inceleyin.

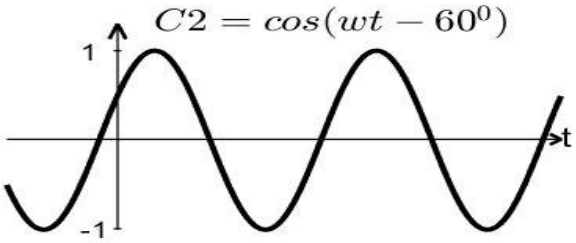


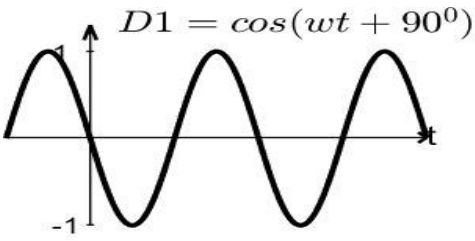


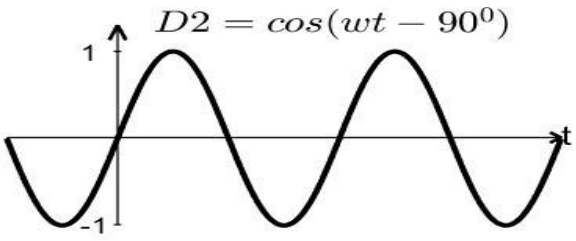


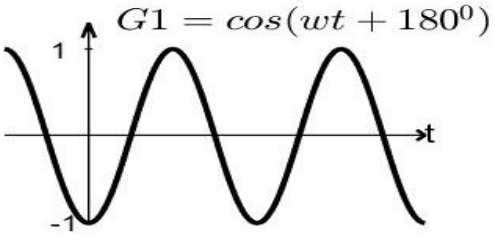


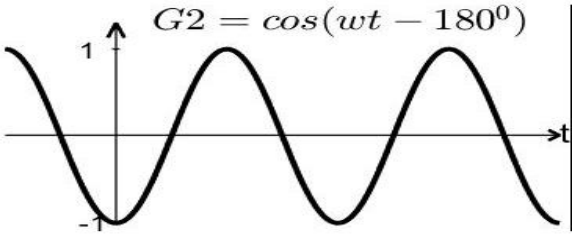


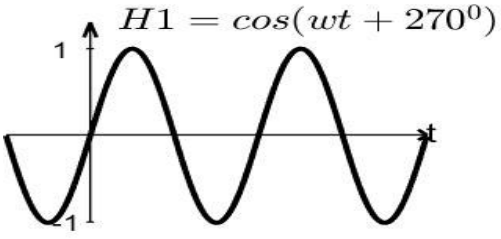


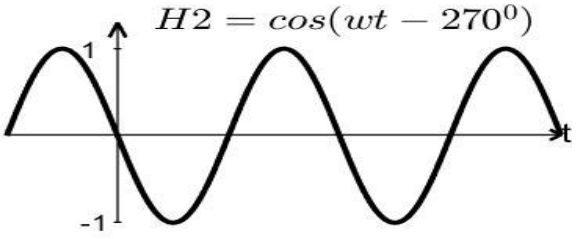


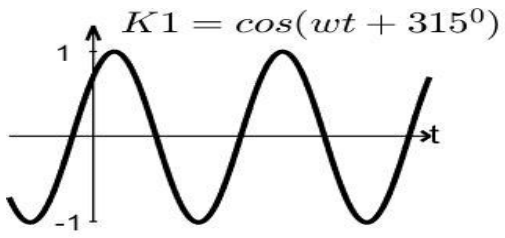


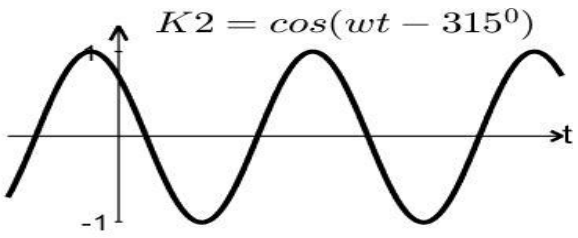












$Cos(wt+180^0)= Cos(wt-180^0)$

$Cos(wt+90^0)= Cos(wt-270^0)$

$Cos(wt+270^0)= Cos(wt-90^0)$

$Cos(wt+45^0)= Cos(wt-315^0)$

$Cos(wt+315^0)= Cos(wt-45^0)$

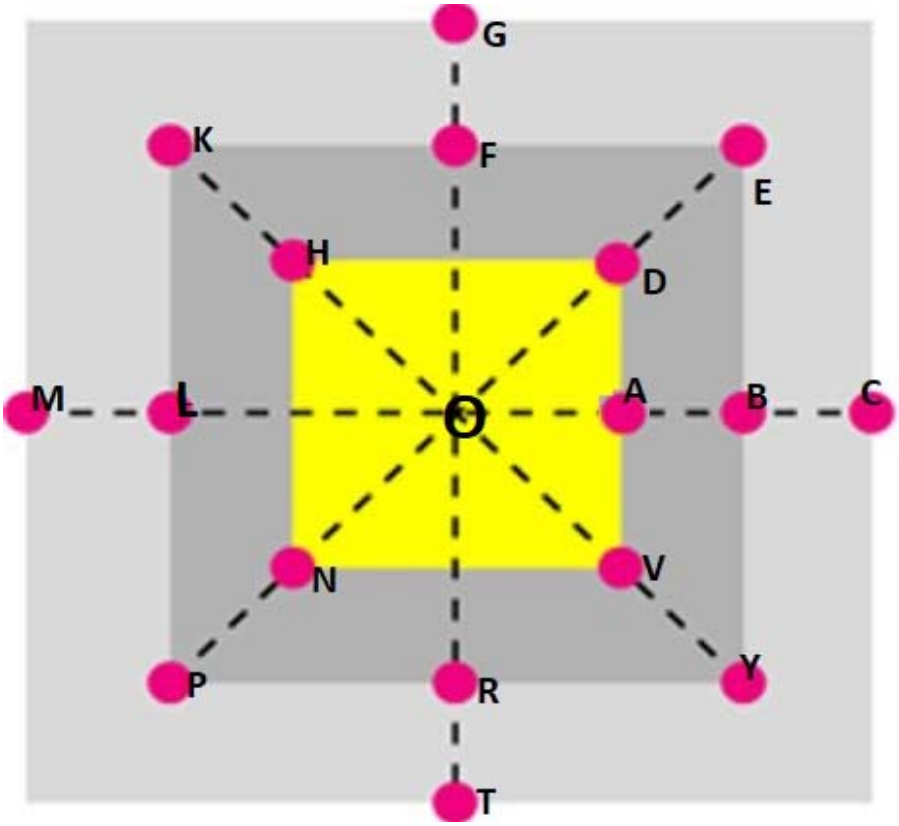
f(x-a) f(x) grafiginin a kadar saga kaymis halidir.

f(x+a) f(x) grafiginin a kadar sola kaymis halidir.

y=x y=x-2 y=x+2

x x x

Pr252) Sekildeki Yildiz diyagraminda OA=x. OB=2x, OC=3x, olarak veriliyor. Butun noktalarin aci ve genliklerini hesaplayın. OA=cos(wt) ise diger noktalari cizin. OA=x=1 birim alin.



Uzunluklari hesaplayalim.

OB=OF=OL=OR=2x

OC=OG=OM=OT=3x

OD=OH=ON=OV=x $\sqrt{2}$

OE=OK=OP=OY=x2 $\sqrt{2}$

Acilari hesaplayalim.

$\angle A=\angle B=\angle C=0$

$\angle D=\angle E=45^0=\pi/4$

$\angle F=\angle G=90^0=\pi/2$

$\angle H=\angle K=135^0=3\pi/4$

$\angle L=\angle M=180^0=\pi$

$\angle N=\angle P=225^0=5\pi/4=-135=-3\pi/4$

$\angle R=\angle T=270^0=3\pi/2=-90=-\pi/2$

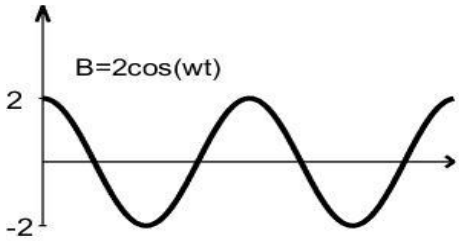
$\angle V=\angle Y=315^0=7\pi/4=-45=-\pi/4$

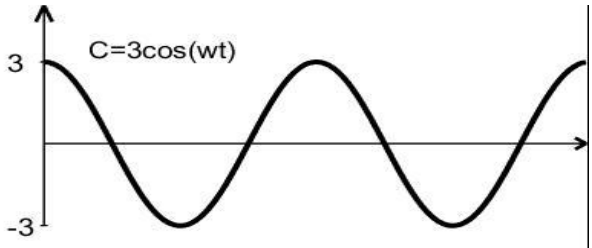
B	2Cos(wt)
D	$\sqrt{2}$ Cos(wt+ π/4)

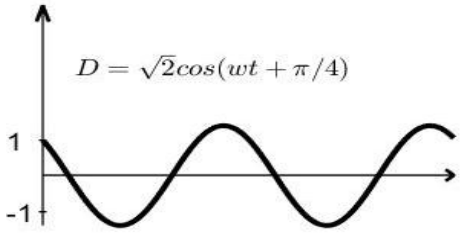
C	3Cos(wt)
E	2 $\sqrt{2}$ Cos(wt+ π/4)

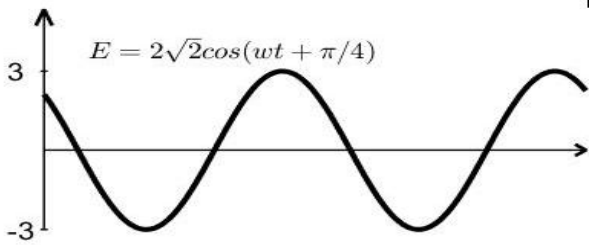
F	2Cos(wt+ π/2)
H	$\sqrt{2}$ Cos(wt+ 3π/4)
L	2Cos(wt+ π/2)
N	$\sqrt{2}$ Cos(wt+ 5π/4)
R	2Cos(wt+ 3π/2)
V	$\sqrt{2}$ Cos(wt+7π/4)

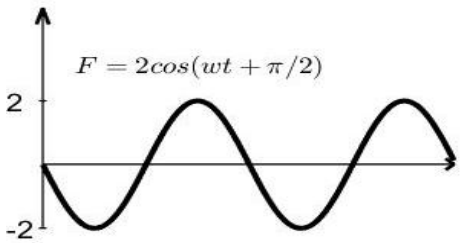
G	3Cos(wt+ π/2)
K	$2\sqrt{2}$ Cos(wt+ 3π/4)
M	3Cos(wt+ π/2)
P	$2\sqrt{2}$ Cos(wt+ 5π/4)
T	3Cos(wt+ 3π/2)
Y	$2\sqrt{2}$ Cos(wt+ 7π/4)

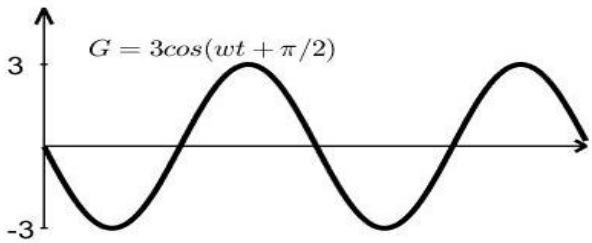


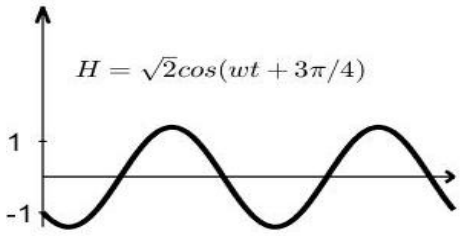


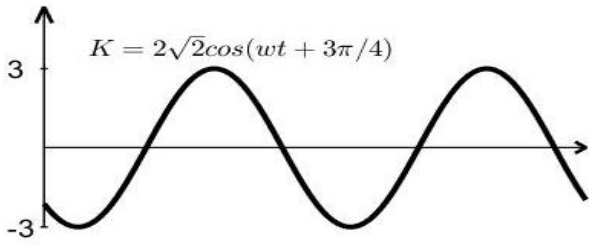












Pr255) a) Sekildeki Yildiz diyagraminda OA=cos(wt) ise 00,01,10,11 noktalarindaki dalga sekillerini cizin.

b)0001101111 dalga seklini cizin.

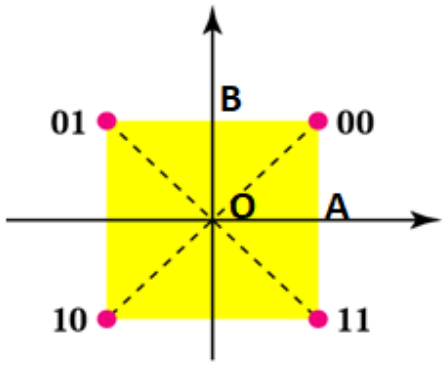
c)0000000000 dalga seklini cizin.

d)1111111111 dalga seklini cizin.

e)1010101010 dalga seklini cizin.

f)1100110011 dalga seklini cizin.

g)`1011011000` dalga seklini cizin.



4 QAM

1 genlik

4 farklı faz.

Cozum:

OA'nin genligi 1 ve acisi sifir olarak verilmis.

00 noktasi genlik $\sqrt{OA^2 + OB^2} = \sqrt{2}$

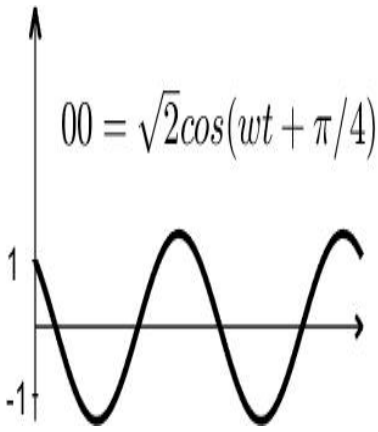
01,10,11 noktalarindaki genlikler de $\sqrt{2}$

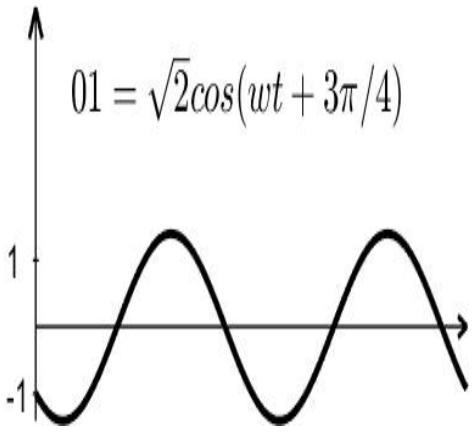
00 noktasinin acisi $45^0 = \pi/4$

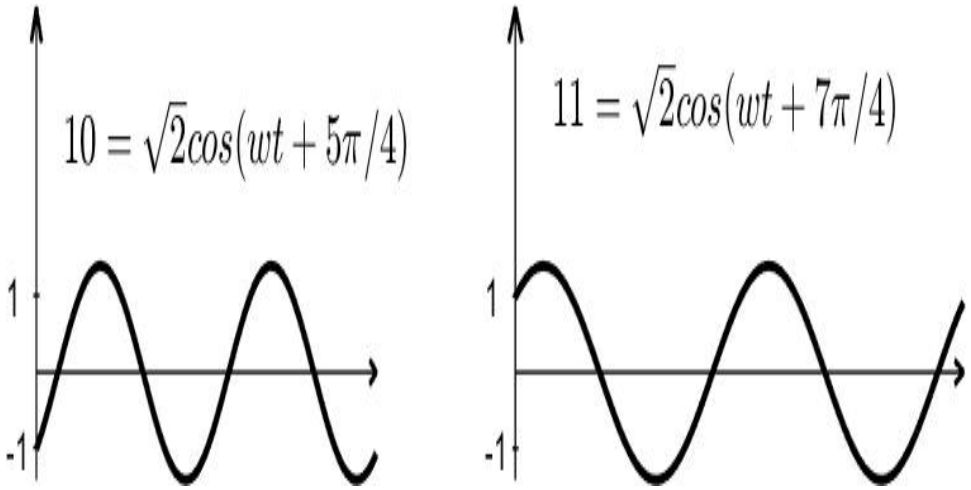
01 noktasinin acisi $135^0 = 3\pi/4$

10 noktasinin acisi $225^0 = 5\pi/4$

11 noktasinin acisi $315^0 = 7\pi/4$

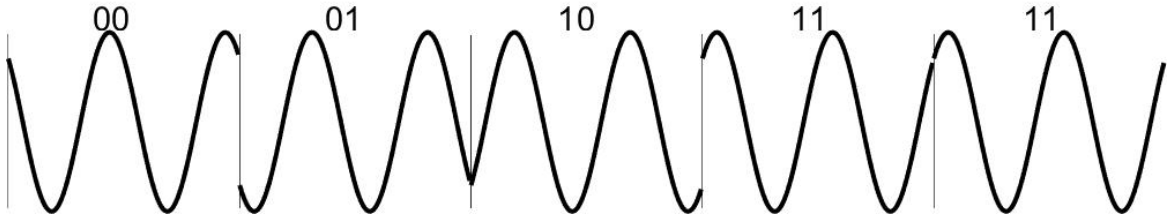






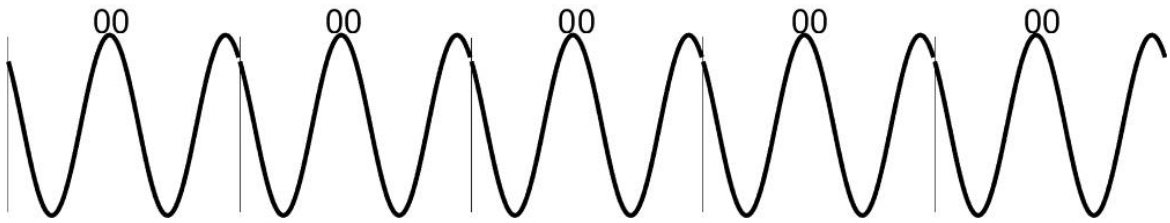
b)

0001101111==00 01 10 11 11



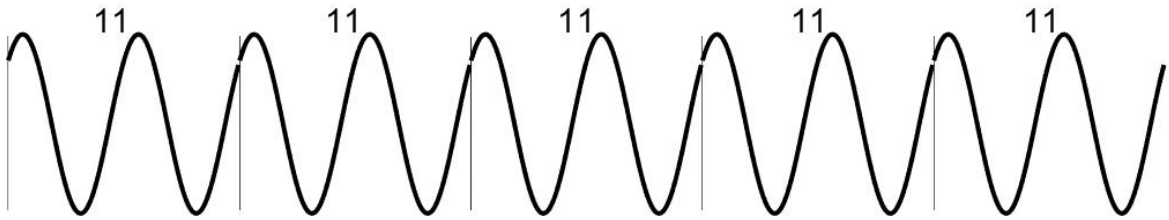
c)

0000000000==00 00 00 00 00



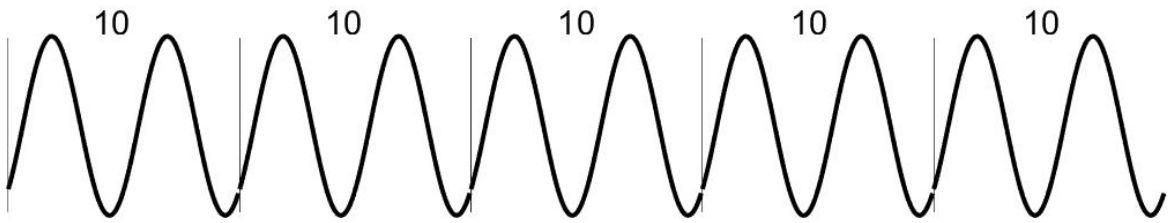
d)

1111111111==11 11 11 11 11



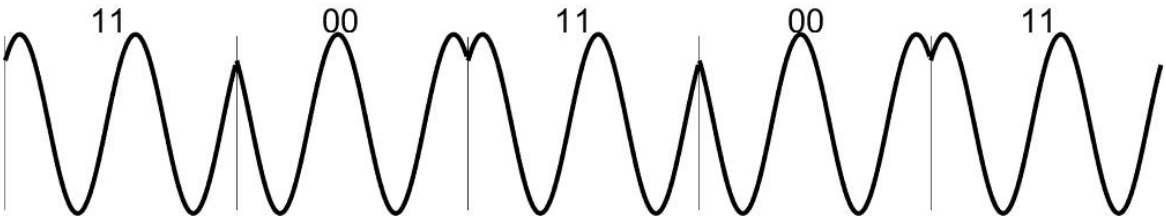
e)

1010101010==10 10 10 10 10



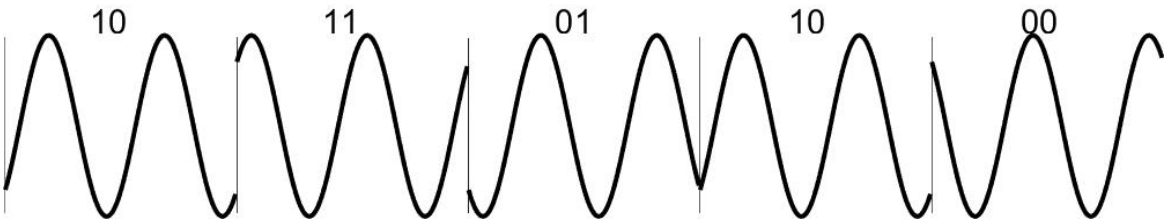
f)

1100110011==11 00 11 00 11



g)

1011011000==10 11 01 10 00



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263) Yüksek yoğunluklu Çift Kutuplu darbe sinyali. (High Density Bipolar Signaling, HDB) N=3, (HDB3 kodu) ornekleri

a)

Giris	1 1 0 0 1 1 0 1 0 0 1 1 0 0 1 0 1 1 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 1 -1 0 1 0 0 -1 1 0 0 -1 0 1 -1 1 0 0 -1 0 1

b)

Giris	1 1 0 0 0 0 0 1 0 0 1 1 0 0 1 0 1 1 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 0 -1 0 1 0 0 -1 1 0 0 -1 0 1 -1 1 0 0 -1 0 1

c)

Giris	1 1 0 0 0 0 0 0 0 0 1 1 0 0 1 0 1 1 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 0 -1 1 0 0 1 -1 1 0 0 -1 0 1 -1 1 0 0 -1 0 1

d)

Giris	1 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 1 1 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 0 -1 1 0 0 1 0 -1 0 0 1 0 -1 1 -1 0 0 1 0 -1

d)

Giris	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 0 -1 1 0 0 1 -1 0 0 -1 0 0 1 -1 1 0 0 -1 0 1

e)

Giris	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 1 0 1
HDB3 kodu	1 -1 0 0 0 -1 1 0 0 1 -1 0 0 -1 1 0 0 1 -1 0 0 1 0 -1

f)

Giris	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1
HDB3 kodu	1 -1 0 0 0 -1 1 0 0 1 -1 0 0 -1 1 0 0 1 -1 0 0 -1 0 1

Giris	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 0 0 1 0
HDB3 kodu	1 -1 1 -1 1 -1 1 -1 1 -1 1 -1 1 -1 1 -1 1 -1 0 0 0 -1 0 1 0