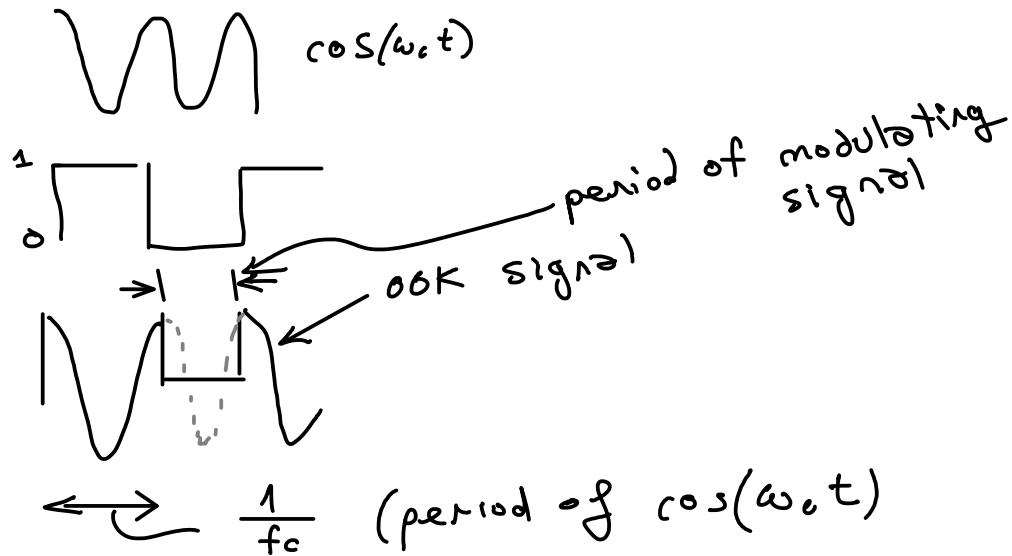


Lecture 11 - Modulation

Exercise 1: Draw the waveform of an OOK (ASK) signal. Show the periods of the carrier and the symbol period of the modulating signal.



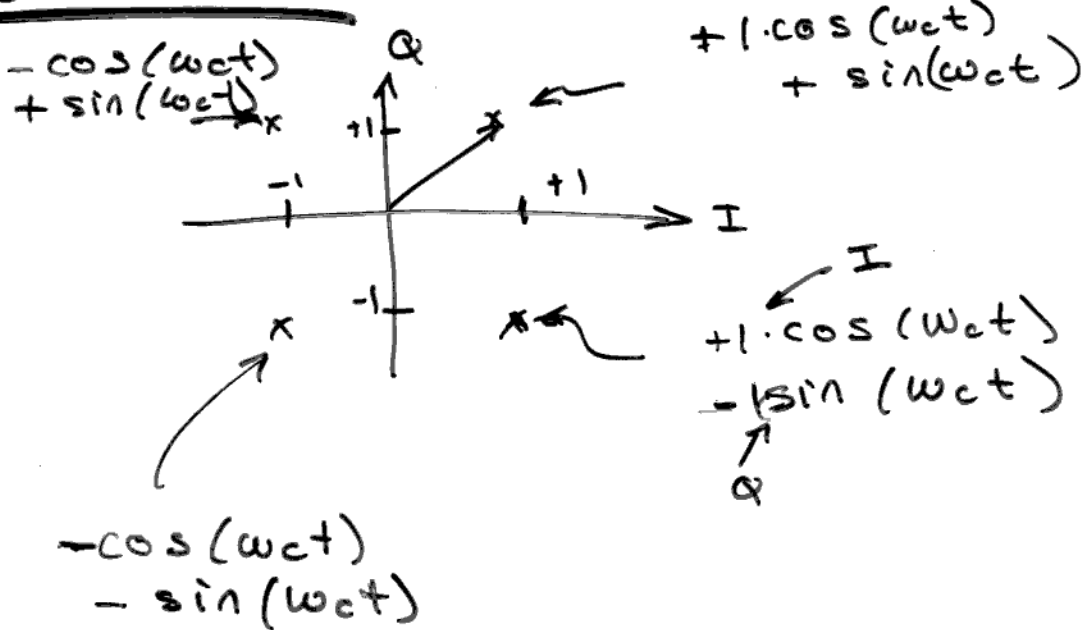
Exercise 2: Label the other three points in the constellation diagram with the equation of the signal that corresponds to that point.

Exercise 3: Draw the constellation for 8-PSK.

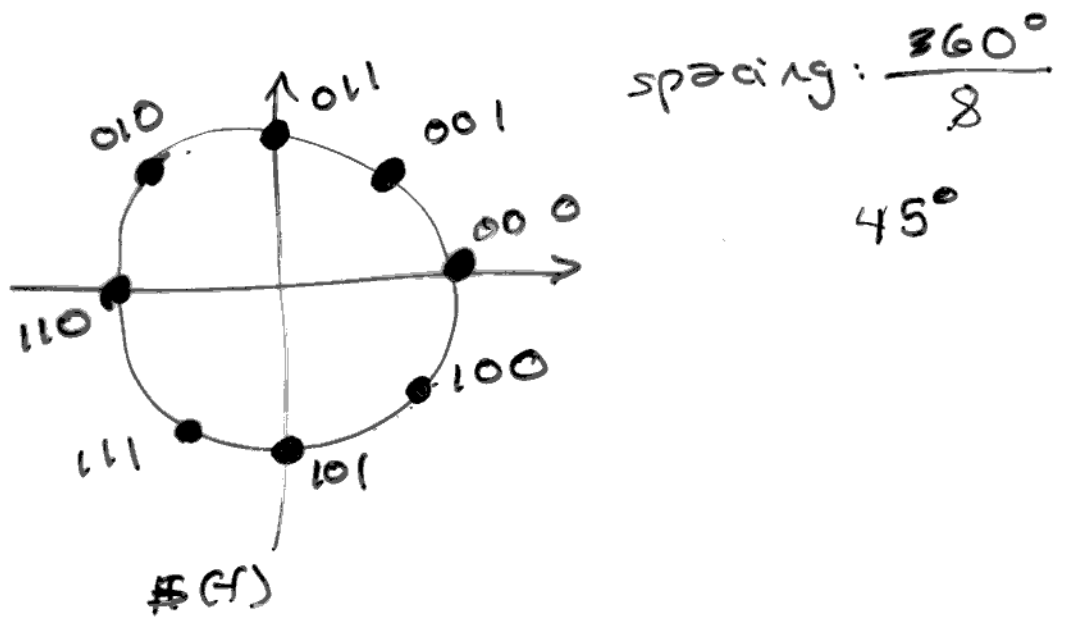
Exercise 4: Assign gray-coded values to the 8-PSK constellation.

see following page for answers

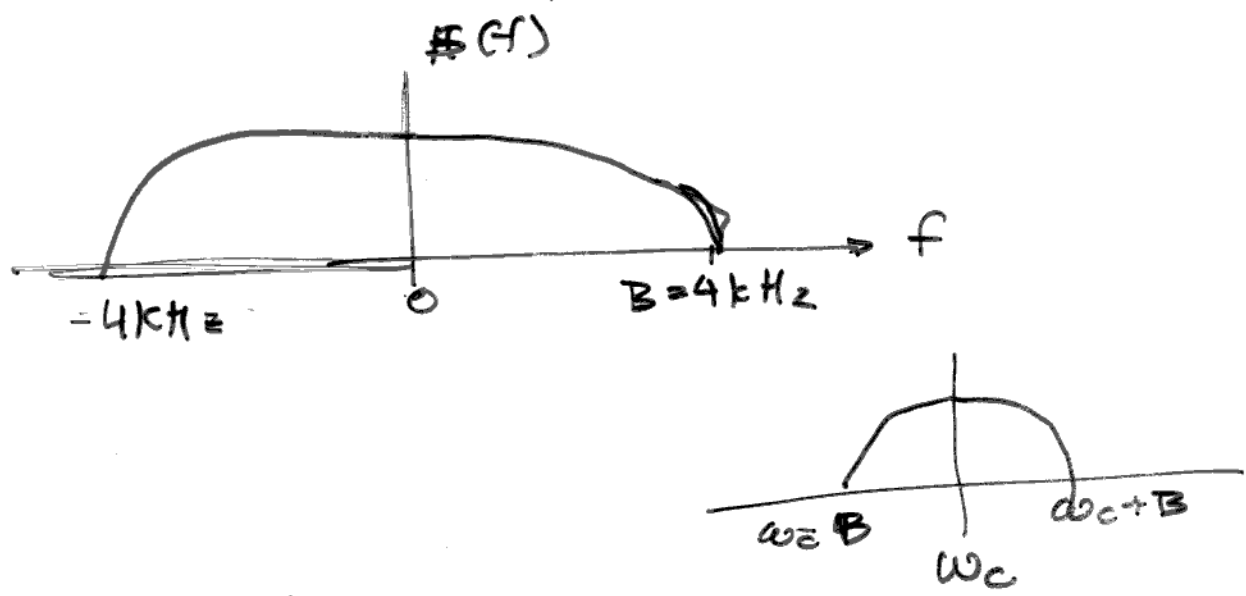
Ex. 2



Ex. 3

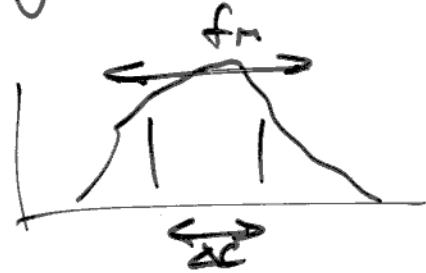
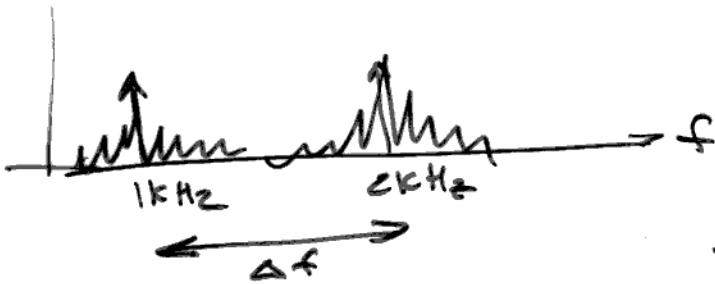


Ex. 4



$\Delta f = \text{frequency deviation}$

(f)



$f_m = \text{modulating frequency}$



MSK

$$\Delta f = \frac{1}{2} f_m$$

e.g. $f_m = 1 \text{ kHz}$ (~~1000~~ 1000 symbols/s)
 $\Delta f = 500 \text{ Hz}$

GMSK
↑
Gaussian.

