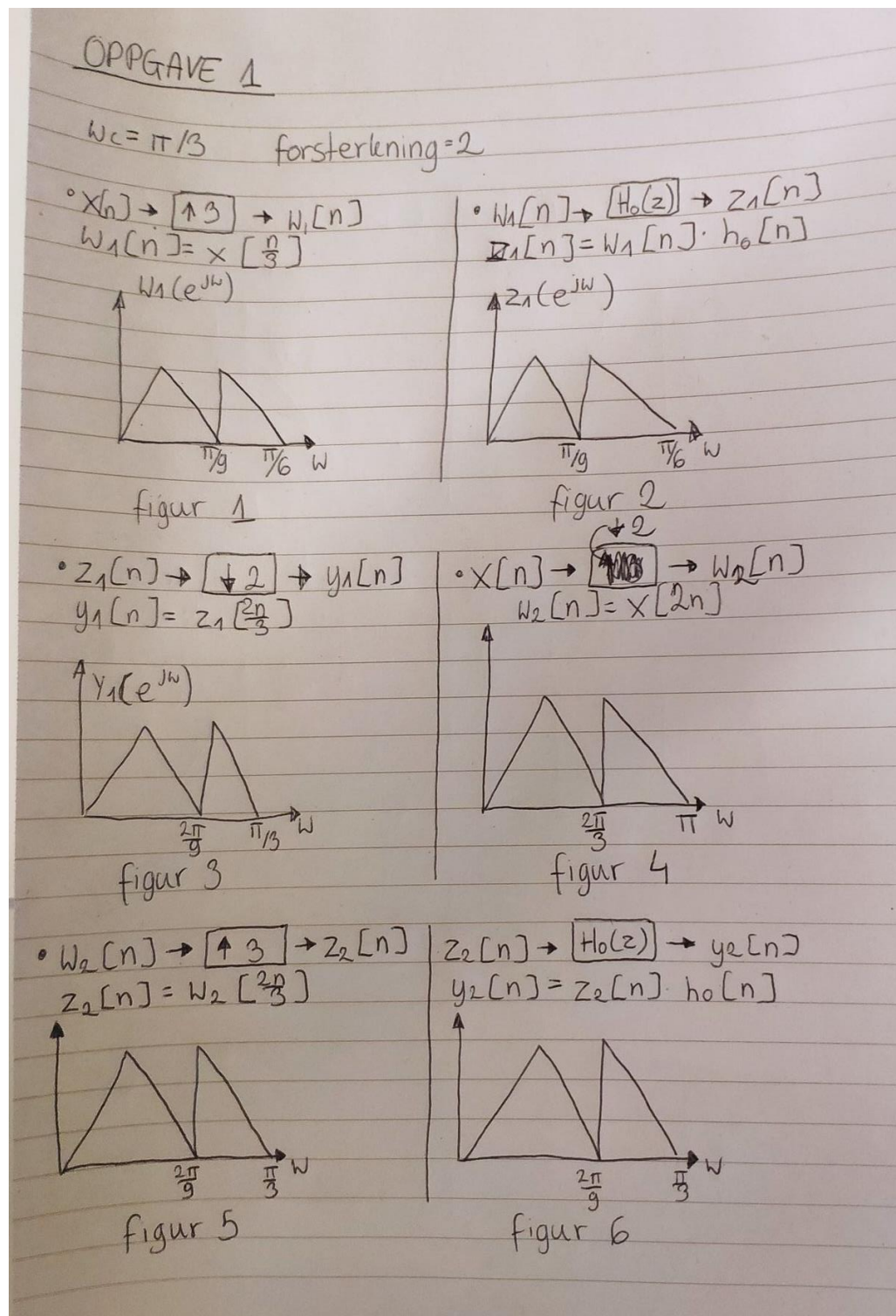


Oppgave 1



Oppgave 2

a) Vi har

$$h[n] = \frac{1}{K} \sum_{k=0}^{K-1} \delta[n - k]$$

Altså

$$H(e^{j\omega}) = \frac{1}{K} \sum_{k=0}^{K-1} e^{-kj\omega}$$

Vi bruker geometriske rekker og får

$$H(e^{j\omega}) = \frac{1}{K} \frac{1 - e^{-Kj\omega}}{1 - e^{-j\omega}}$$

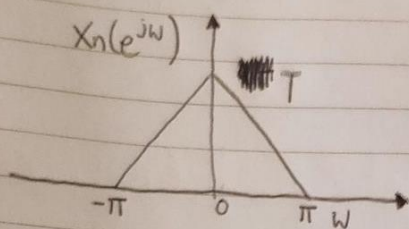
$$H(\Omega) = \frac{1}{K} \frac{1 - \Omega^{-K}}{1 - \Omega^{-1}}$$

Oppgave 3

OPPGAVE 3:

$$1/T = f_s \cdot 2 \rightarrow \omega_s = 2\pi f_s$$

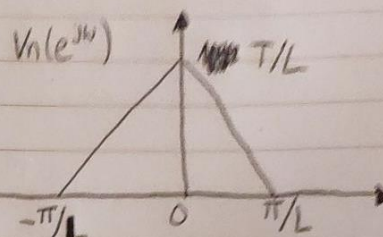
$$x_c(t) \rightarrow \boxed{C/D} \rightarrow x[n]$$



figur 1.

$$x[n] \rightarrow \boxed{\uparrow} \rightarrow v[n]$$

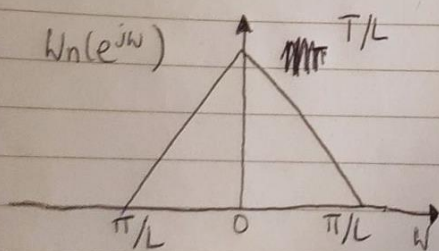
$$v[n] = x[n], T' = T/L$$



figur 2.

$$v[n] \rightarrow \boxed{H(e^{j\omega})} \rightarrow w[n]$$

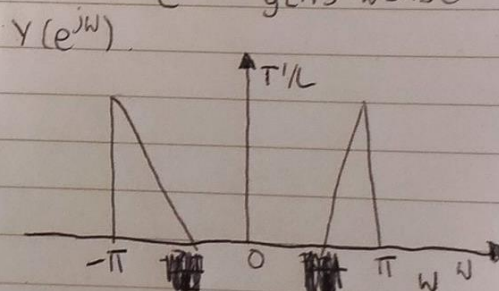
$$w[n] = v[n] \cdot h[n]$$



figur 3.

$$w[n] \rightarrow \otimes \rightarrow y[n]$$

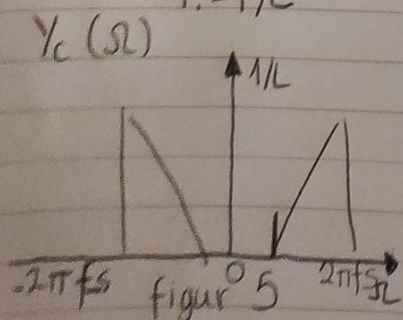
$$y[n] = w[n] e^{j\pi n}$$



figur 4

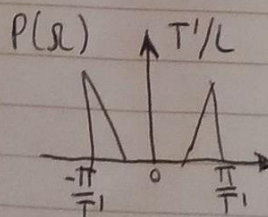
$$y[n] \rightarrow \boxed{D/L} \rightarrow y_c(t)$$

$$T' = T/L$$



figur 5

Skisse P(\Omega)



Oppgave 4-2

Svar: Alternativ b)

Oppgave 4-5

Svar: Alternativ b)