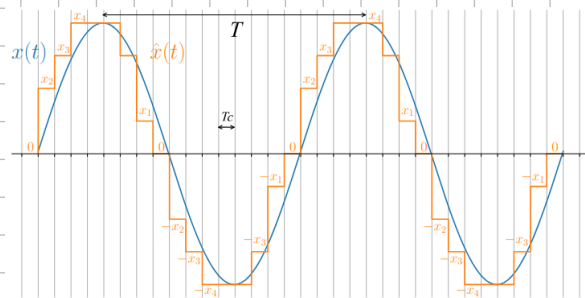


ERT 23

Oppg 1)

$$x_n = V_0 \sin(2\pi \cdot \frac{n}{16})$$

$$= \underline{\underline{V_0 \sin(\frac{\pi n}{8})}}$$



Oppg 2)

$$B = -b_7 2^7 + \sum_{i=0}^6 b_i 2^i$$

$$B_{\min} = 10000000_2$$

$$= -1 \cdot 2^7 + 0 = -128$$

$$B_{\max} = 0111111_2$$

$$= 0 \cdot 2^7 + \sum_{i=0}^6 1 \cdot 2^i$$

$$= 0 + 1 + 2 + 4 + 8 + 16 + 32 + 64$$

$$= \underline{\underline{127}}$$

Oppg 3) $\hat{x} = B \Delta V$

$$\hat{x}_{\min} = -128 \cdot \Delta V = -5V$$

$$\Delta V = \frac{5}{128} = \underline{\underline{3,91 \cdot 10^{-2} V}}$$

$$\hat{x}_{\max} = 127 \cdot 3,91 \cdot 10^{-2} = \underline{\underline{4,97}}$$

$$0,143(85) x_1 = U_0 \sin \frac{\pi}{8}$$

$$(5 - 4,97) = \sin \frac{\pi}{8} = 0,01$$

$$x_1 = U_0 \sin \frac{\pi}{8}$$

$$\hat{x} = B \Delta V$$

$$U_0 \sin \frac{\pi}{8} = B \Delta V$$

$$B = \frac{U_0}{\Delta V} \sin \frac{\pi}{8}$$

$$B = 48,64 \approx 49$$

$$\underline{R = 00110001_2}$$

Oppg 8)

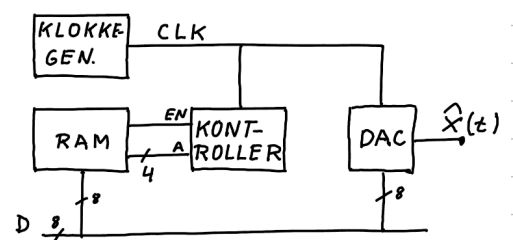
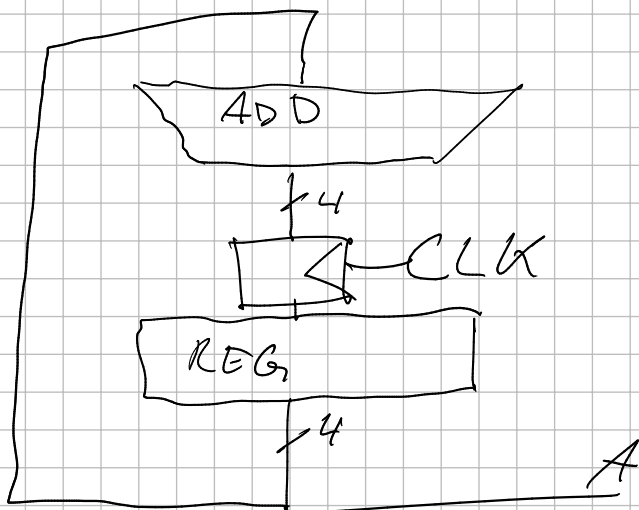
$$A = a_3 a_2 a_1 a_0$$

$$A = 0 \text{ til } 15$$

$$A_0 = 0000$$

$$A_{15} = 1111$$

Oppg 9) Klokkeslutt



Q/4 10)

A_0	A_2	B	X_n
0	0000	00000000	0
1	0001	00110001	x_1
2	0010	01011011	x_2
3	0011	01110110	x_3
4	0100	01111111	x_4
5	0101	01110110	x_3
6	0110	00110001	x_2
7	0111	00110001	x_1
8	1000	00000000	0
9	1001	11001111	$-x_1$
10	1010	10100101	$\sim x_2$
11	1011	10001010	$\sim x_3$
12	1100	10000000	$\sim x_4$
13	1101	10001010	$\sim x_3$
14	1110	10100101	$\sim x_2$
15	1111	11001111	$\sim x_1$

Q/4 11)

