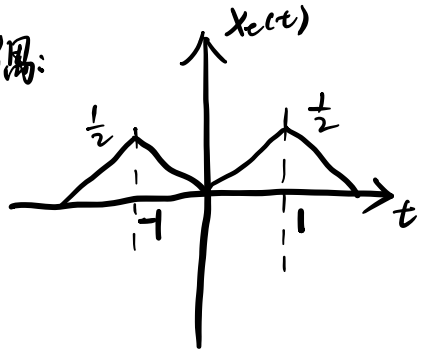
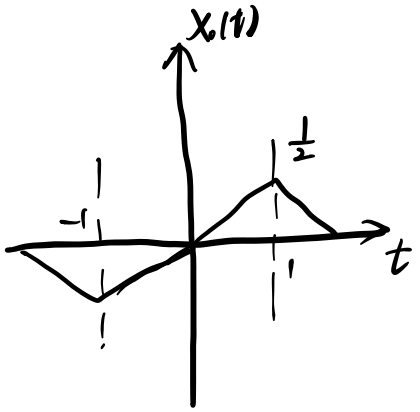
第二次作业
2.16 (a)(g)
2.21 (1) c
(2) 求x1[n]和x3[n]
2.30 2,3,4,7,9,20
2.31 2,3,9,15,16
2.32

T2.16

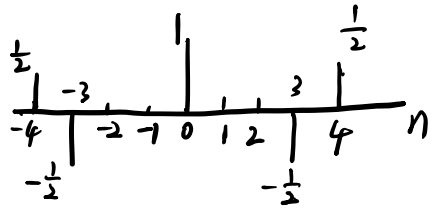
(a) 偶:



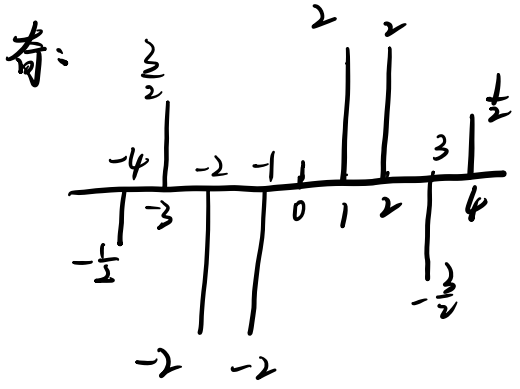
奇:



(g) 偶:



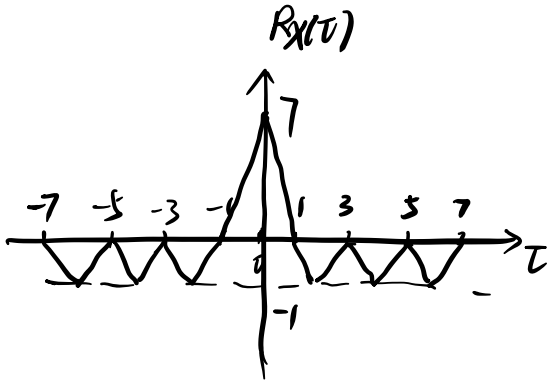
奇:



T2.21

(1) c

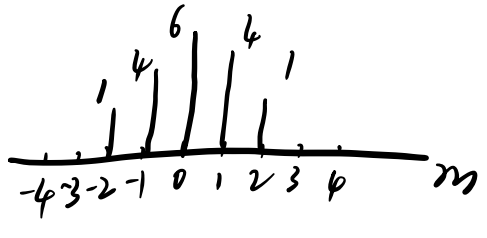
$$R_x(\tau)=\begin{cases}7-|\tau| & 0\le|\tau|<1\\ 1-|\tau| & 1\le|\tau|<2\\ |\tau|-3 & 2\le|\tau|<3\\ 3-|\tau| & 3\le|\tau|<4\\ |\tau|-5 & 4\le|\tau|<5\\ 5-|\tau| & 5\le|\tau|<6\\ |\tau|-7 & 6\le|\tau|<7\\ 0 & |\tau|\ge7\end{cases}$$



(2) $X_1[n]$、$X_3[n]$

$X_1[n]$: $R_{X_1}[m]=\begin{cases}3-|m|, & 0\le|m|\le3\\ 0, & |m|\ge4\end{cases}$

$x_3[n]$: $R_{X_3}[m]=\begin{cases}6 & m=0\\ 4 & |m|=1\\ 1 & |m|=2\\ 0 & |m|\ge3\end{cases}$



T2.30

	(2)	(3)	(4)	(7)	(8)	(20)
记忆性	✓	✓	✓	×	×	✓
因果性	✓	×	×	✓	✓	×
稳定性	✓	✓	✓	✓	✓	✓
线性	×	✓	✓	×	× (乘虚数时不满足)	✓
时不变性	✓	×	✓	×	✓	×

T2.31

(2) 可逆，逆系统：$y[n]=x[1-n]$

(3) 不可逆. 对于 $x(t)$ 和 $x(t)u(t+t_0)$ 有相同输出

(8) 不可逆 周期函数不可能一一对应

(15) 不可逆 $x[n]=1$ 与 $x[n]=\begin{cases}1, & n\ge0\\ -1, & n<0\end{cases}$ 有相同输出

(16) 可逆 逆系统：$y[n]=\begin{cases}x[n+1], & n\ge0\\ x[n], & n\le-1\end{cases}$

T2.32

(1) $y(t)=|x(t)+x(t-3)|$，非线性，因为存在绝对值。

时不变，因为对于输入时移，输出都会相应时移。

(2)