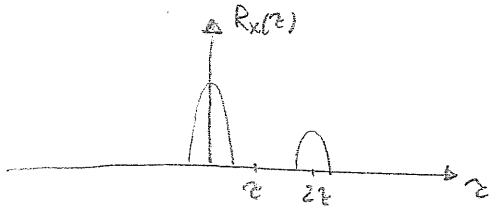
7.6.2010 AA 08-09 e prec. Test #1

2) b.



Data $X_1 = X(t_1)$ $X_2 = X(t_1+\tau)$ $X_3 = X(t_1+2\tau)$ $X_4 = X(t_1+3\tau)$

i termini sulla diagonale della matrice di covariaza sono

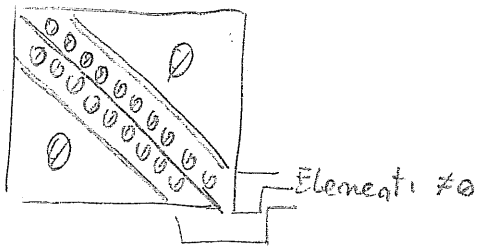
$$cov(X_i, X_i) = \sigma^2_{X_i}$$

i termini sulla 2ª diagonale

$$cov(X_i, X_{i-1}) = E\{(X_i - \eta_{X_i})(X_{i-1} - \eta_{X_{i-1}})\}$$

...ero le covariaze di variabili distaati τ e covariaze e correlazioni $= \emptyset$

sulla III^a diagonale le covariaze di variabili distanti 2τ



S. 3.1

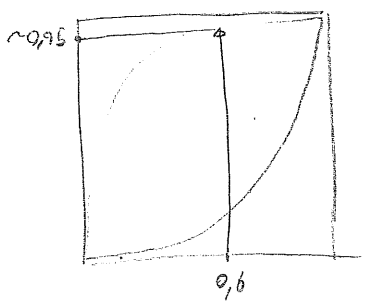
2000 soggetti
1000 malati

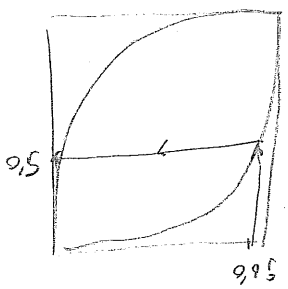
FP = 17
FN = 6

$Seas = \frac{VP}{VP+FN}$ $VP = malati - FN = 994$ $Seas = 0{,}994$

Seas = 98,5% Spec = 96%
prevalenza = 6%

$Pt_p = Pt_{p|m} \cdot Pm + Pt_{p|s} Ps = Seas \cdot prev + (1-spec)(1-prev) = 9{,}67\%$





...6.2010 test#1 AA0B01 e prec

Es. 4

I. C ☒

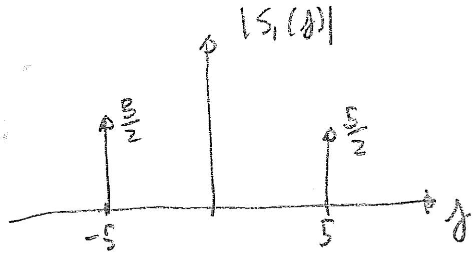
II. A

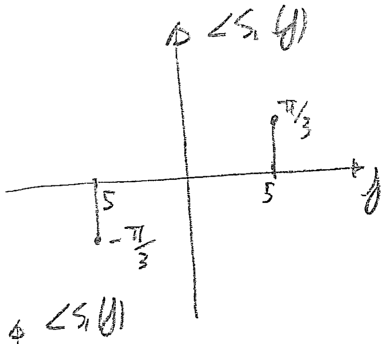
III. $P_{10}(8) = \binom{8}{10} 0{,}3^8\, 0{,}7^2 = 0{,}14\%$

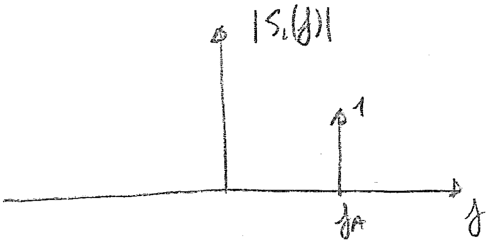
IV) $P\{succ < 9\} = 1 - [P_{10}(10) + P_{10}(9)] = 0{,}999$

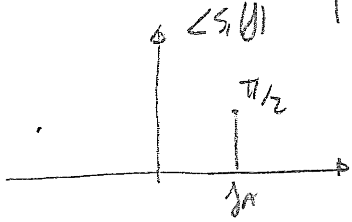
Es. 5

$S_1(f)$









$s_1(t) = j\, e^{+j2\pi f_A t}$

Es. 6)

$F_{min} = 490\,KHz$

$f_{max} = 650\,KHz$

PASSA BASSO $\quad F_c \geq 1300\,KHz$

PASSA banda $\quad B = 160\,KHz \quad \frac{f_{max}}{B} = 4{,}\# \quad m = 4 \quad F_c = \frac{1300\,KHz}{4} = 325\,KHz$

$B = 1\,MHz \quad s_1(t) = s(t)\cos 2\pi f_0 t + 5\, s(t) \sin 2\pi f_0 t \quad f_0 = 13\,MHz$

Banda di $s_1(t)$ $\quad [12:14]\,MHz$

$F_c = 100\,Hz \quad dt = 0{,}01\,s$

lunghezza $h[n] = 20$ campioni

$df_{out} = \frac{1}{N_{out}\,dt} = 0{,}1 \quad N_{out} = N_{in} + 20 - 1$

$0{,}1 = \frac{1}{(N_{in} + 20 - 1)\,dt} \quad N_{in} \cdot 0{,}1 = 100 - 1{,}9$

$N_{in} = 981$

$T_{in} = N_{in} \cdot dt = 9{,}81\,s$

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test1

ES. 7

I. A

II. C

III. B

IV. B