

Green
$$x_1, x_2, \dots, x_n$$
 be fid random variables having density function

$$f(x) = \begin{cases} 2q & \text{for } -q \leq x \leq q \\ 0 & \text{otherwise} \end{cases}$$

$$f(x) = \begin{cases} e^{-j\omega x_0} \\ 0 \\ 0 \end{cases}$$

$$f(x) = \begin{cases} e^{-j\omega x_0} \\ 0$$

Let
$$aw/Jn = h \Rightarrow n = atcol/n^2$$

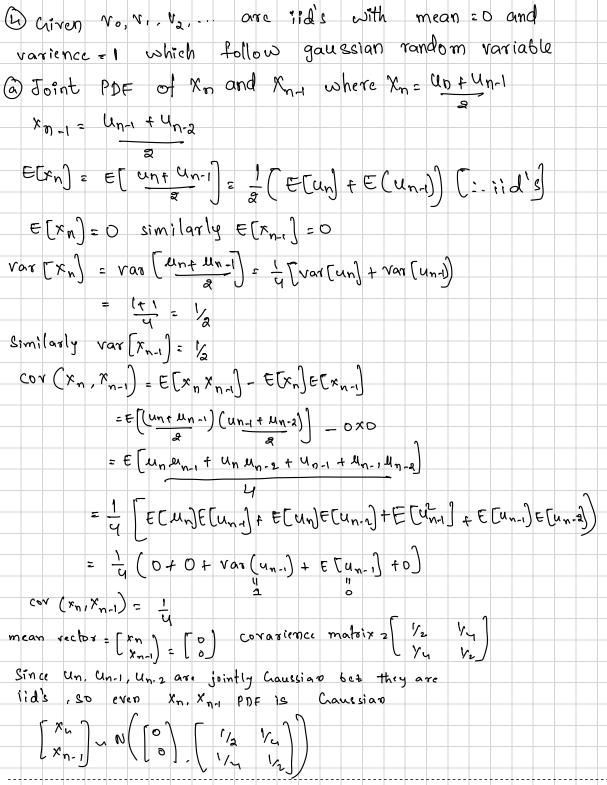
If $n \to aw$, $n \to 0$

Let $a^*w^* + \ln\left(\frac{\sin(w)}{\sin(w)}\right)$

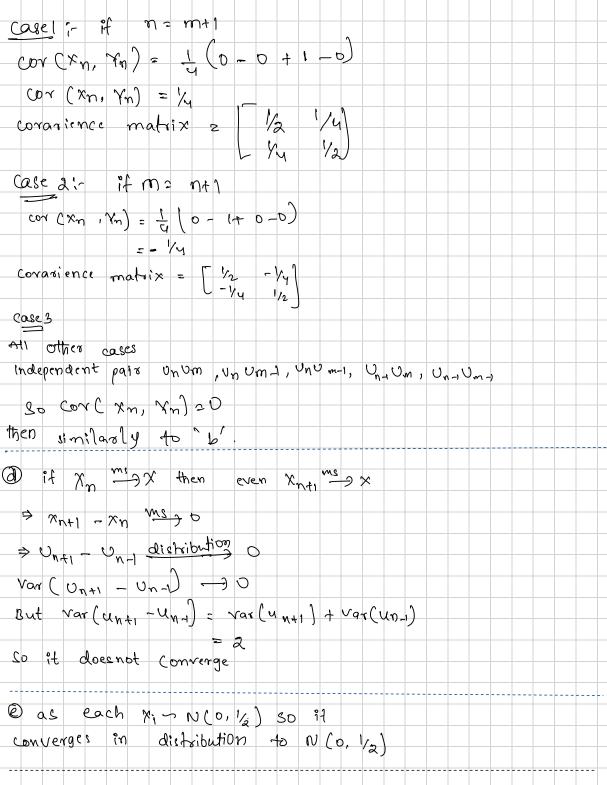
Let $a^*w^* + \ln\left(\frac{\sin(w)}{\sin(w)}\right)$

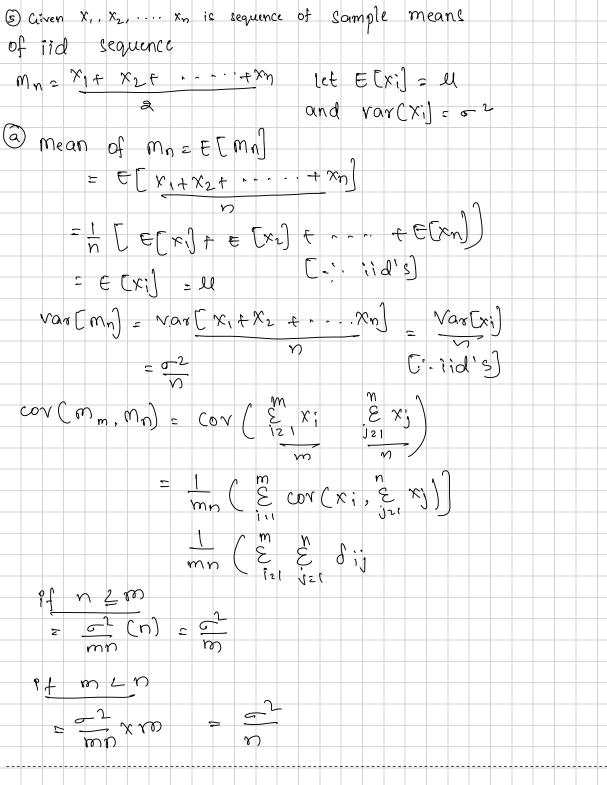
Let $a^*w^* + \ln\left(\frac{\sin(w)}{\sin(w)}\right)$

Let $a^*w^* + \ln\left(\frac{\sin(w)}{\sin(w)}\right)$
 $a^* + \ln\left(\frac{\sin(w)}{\sin(w)}\right)$
 a



\wedge			. ,			J			.		امما	.										
(b)	J	oint	- 1	DF	0-	Yn	an	o	111-1	\sim	MERC	_										
	Υ,	6	un-	un-1		. Y _n	4100	_	Una	m	- L	λ _n ,	ŧm.	- 1								_
	• • •		a				710)			a				-								_
	FI	- Y.)	<u>.</u>	un - Ur	١-١)	_ <u> </u>	E (un)) _ E ([u _{n-1}]													_
						- 2(, ,		اند]	(s'6)												_
			(Yn+m	-					F													_
Va	r ([Yn]	- V	xo(ℓ	ru -	<u>un</u> -i)	<u>ا</u> د ع	(1	ar (1	$(\kappa \lambda)$	- Va	r (u,	n -1))								_
					5	, ,	C	<i>i</i> i	id'	£ [_
	raz	(X) =	ર્વ	sin	nilar	ly	Var	(Y,	v4m)	واء											_
Co	v	(Yn	, Yne	m)	= E	[٣, ٢	าษพโ		ECX	n) E	-	ักรุฑ										
											٠,		J									
					16	n -u 2	n-リ	C We	\+m *	- 4	N+M	-1)	_	٥								
																٦						
				- E	Lan	u _{n+m}	- u	ทบุ	m - 1	O _n	ŧm√,	m-1	+ (m-1	y#w	ا-۲						
		10	1, (n																			
ره	7	(),	n, [m	+m)	2																	
	sîn	ce	Co٠	v ()	fn, Y	m+m)	z 0	γ γ	'n,	Yn +1	m	ar.	ìr	dep	end	Lent						
		(4		1	h	- (·	Y, 4 }	(و														
J.	yn,	ynt r	י רי	L) =	त्त	e																
Ιŧ	is	C	aus:	sian	u	oith	meat	ი එ	and	d v	arie	nce		ورا								
																			 	 	 	-
6	Ĵο,	n P	DF	of	አո	f Km																
								_ر	۰. ر													
			a			Ŷη.		व	, m													
ε	~%]=) = 0	>		and	€(Tm) =	ৃ১														
var	[X v	J =	1/3	a	nd	408	C.L."]	= 1/2														
Cογ	(x	'n ,Y.	- (۳	€ (×η'	Ym) -	- +	×) =	وس) و	E C ?	اريم											
			5 E	-1- 1.	3. 1	u., 1	Ţ.,	_ ,,	J.,))												
				1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	4m-1	Car	nt u	- , ~~	\ \	- (O										
				1 -				4									^ <	1				
			4	/€	un	(m) -	<u> </u>	wu,	m-1	4	Y.	4 U	W -	- u	~ ~ (Um.	4	}				
																			 	 	 	-





(b) to show it is independent increment month-mo should be dependent on mo $M_{n+1}-M_n = X_1+X_2 \dots + X_n - M_n$ 2741 Mn11- Mn = 2mn>n + xn+1 - mo M-1 $= \frac{n}{n+1} m_n - m_n + \frac{n}{n+1}$ m_{n+1} - $m_n = -m_n$ + m_{n+1} + m_{n+1} It is dependent on previous increment so not independent increments The distribution of most - mo should be same for all n's from equation (1) $m_{n+1} - m_n = -m_n + \frac{\kappa_{n+1}}{\kappa_{n+1}}$ $Yar(m_{n+1}-m_n) = \frac{1}{(n+1)^2n} + \frac{1}{(n+1)^2}$ So the varience of Mnti-Mn depende on no so it is not stationary

(B) a E[xn] = E[xn/head] P(head) + E[xn/tail] P[tail]	
= 1 × 1/2 = 0	
$R_{x}(m,n) = E(x_{m}x_{n})$	
= E(xm xn / Head) P(Head) + E[xmxn/tail] P[tail]	ł
The process is stationary.	
Exis are determined by flipping a coin, and	
it takes same value based on heads or tails-	-
rf heads: then x1, x2, x3xn takes values 1,1,	+
if shifted the joint PDF of xi's are still same	t
> Similar for fails also	+
So it is stationary radom process	ł
C No, the process ps still stationary because	
even of the probability of head is P and	1
(-p for tails	+
the cases doesn't change same as b' part	t
just the probability of getting	T
the case changes.	
	+
	+
	+
	t
the END	_
	-