eesi <del>irraa sa</del> mmaani diqeesti w	1) Model can be rewritten as $(1-0.1B)^2 X_t = (1-1.2B) Z_t$ $X_t = (1-0.1B)^{-2} (1-1.2B) Z_t$	adam.commonoo
enummanamussaasinaan kasuutuuruu	$= (1 + \frac{-2}{1!} (-0.18) + \frac{(-2)(-3)}{(-2)(-3)} (-0.18)^{2} + \dots) (1 - 1.28) \xi_{+}$	Particular Section 1
	$= (1 + 0.28 + 0.038^{2} +)(1 - 1.28) +)(1 + 1.20) +$	010010030111400200
Carrier Standard Community	= (1-1.2B+0.2B-0.24B <sup>2</sup> +0.03B <sup>2</sup> +)7+	5.W2000000000
	=(1-B-0.z)B2多+···)Z+	
	:. Y = 1 Y = 0.21	
(b	) Casual but not invertible	999222X
(0	) CASUAL BUT NOT MYERTIBLE	
[C	) f(0)=0.2f(1)-0.0/f(2)+1-1.2(0.2-1.2)	month of the same
news removement with streaming was tricked to de-	= 0.2 8(1) -0.0   8(2) + 5.2	HAVENOATERE
	Y(1) = 0.2 Y(0) -0.0   Y(1) - 1.2	AMENGANAMEN
	8(2) = 0.28(1) -0.018(0)	OSCIOLATION CONTRACTOR
	2) $E(X_{+}) = cos(x_{+}) EZ, + sin(x_{+}) EZ_{2} = 0$	
<u> </u>		
	$E(Y_4) = 2\cos(\lambda t) E_{\xi_1} = 0$	
(b	$\frac{1}{N}(t,k) = \cos(\lambda t) \cos(\lambda (t+k)) + \sin(\lambda t) \sin(\lambda (t+k))$	
	$= \frac{1}{2} \left[ \cos(2\lambda t + \lambda k) + \cos(\lambda k) \right] - \frac{1}{2} \left[ \cos(2\lambda t + \lambda k) - \cos(\lambda k) \right]$	
	= cos(NK) which does not depend on t, So Xt is stationary.	
IG	) χ <sub>γ</sub> (t, 0) = 4 ως <sup>2</sup> (λt)	
EMCOCINETY WITHOUT PROMOBILING	$x_{Y}(t, k) = 4 \cos(\lambda t) \cos \left[\lambda (t + k)\right]$	
intitude de la companya del companya del companya de la companya d	It is not stationary since Ky(t,K) depends on t.	
d	) 7(t,0) = Cov (X+, /+) = 20012(N+)	
	$\gamma(t, \kappa) = Cov(X_t, Y_{t+\kappa}) = 2 cos(\lambda t) cos(\chi(t+\kappa))$	
		and the same of th

er recent and remains a reason of the same and a second a	$(a) \hat{Z}_{200}(1) = 0.5 \times 4 + 0.2 \times 5 + 0 + 0.2 \times 1 - 0.4 \times 0.5 = 3$	EUWERLANDERS ZO STOLLING A NAMELEZ Z ZVIOLAGA I SIGNAMEZ A IV
200 St. A. Processor of Parameters and Association of Communications and Communication and Communication and Communication and Communication and C	$\hat{Z}_{200}(2) = 0.5 \times 3 + 0.2 \times 4 + 0 + 0 - 0.4 \times 1 = 1.9$	
×	Zwo (3) = 0.5 ×1.9+0.2×3 = 1.55	Lease removement to the second
	$Z_{200}(4) = 0.5 \times 1.55 + 0.2 \times 1.9 = 1.155$	
TOTAL DESCRIPTION OF THE PROPERTY OF THE PROPE	Zzm (5) = 0.5 x 1.155 + 0.2 x 1.55 = 0.8875	
		punnonnumanavannavamavannonnunganavannunganavarannunganavarannunganavarannunganavarannunganavarannunganavaran
Politika in the second	(b) $P_{201}^{207} = E(\Omega_{201}^2 \mid Z_{200}, \dots) = (\frac{4}{2\times1.96})^2 \cdot 1.0204^2 = 1.0412$	TRACE LIBRORY AND TRACE OF A TRAC
	P200 = E ((Z202 - Z200) 2   Z200,)	
vannum panavana panav	= E \ (0.5 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	[2200;"]
	$= E \left[ (0.5  \Omega_{20} + \Omega_{202} + 0.2  \Omega_{20})^2 \right] \geq \infty, \dots $	
**************************************		ENERTTY-NETTY-PERCENTALE-PORTTY-PORTCENTALEMENTONS.
	= E ( (0.7 Azo) + Azoz) 2   Zzw, ] (+)  Since At id N (0, 1.0204)	necessaries recessores remarates acatalancias realizados de la composición de la composición de la composición
	Since at 11d N (0, 10204)	emenonement (Cetters)
***************************************	so (*) can be rewritten as = $E[0.49  a_{20}^2 + a_{20}^2] = 1.49 \times 1.0412 = 1.5$	514
	The 95% prediction interval of Zzoz is 1.9 ± 1.96 x S1.5514	TESTA (ASSAULTERIORISTICATORISTICA (ASSAULTA SASSAULTA ASSAULTA SASSAULTA SA
	$P_{203}^{200} = E[(Z_{203} - \hat{Z}_{203}^{200})^2   Z_{200},]$	nttiott missionkalainkisti minkoitaikistoitaikistoitaikinkalainkantan tavas.
	= F[(0.57x2+0.27x1+ax2+0.2ax2-0.4ax)-0.52200-0.27200)2/2200,]	
	$= E\left\{ \left( 0.5 \times 0.7  \Omega_{201} + 0.5  \Omega_{202} + 0.2  \Omega_{202} + 0.2 \times \Omega_{201} - 0.4  \Omega_{201} \right)^{2} \mid \mathcal{E}_{200}, \cdots \right\}$	
	+ 1 2 2 3	MET DE SOUTH
	= F[ ( a203+0.7 a202+0.15 a201)2   7200,]	manamenanamenanamenanes :
******************************	= E[ Azo3 + 0.49 Azoz + 0.0225 Azo] 1720,]	entrementum entrementum entrementum entrementum entrementum entrementum entrementum entrementum entrementum en
00000000000000000000000000000000000000	= 1.5125 × 1.0412 = 1.5748	
	The 95% Prediction interval of Zroz is 1.55 ± 1.96 x J1.5748	TAKT, TOO DE TOO
	(c) $\Omega_{20} = 18 - 0.5 \times 4 - 0.2 \times 5 - 0.2 \times 1 + 0.4 \times 0.5 = 15$	
NEW YORK OF THE PROPERTY OF TH	$\hat{Z}_{202} = 0.5 \times 18 + 0.2 \times 4 + 0.2 \times 15 - 0.4 \times 1 = 12.4$	MOCANALA CONTINUE CO
emmengan renaura wa	Z203 = 0.5X12.4 +0.2X18 - 0.4X15 = 3.8	
ورود سرود درود المعادد	$\hat{z}_{204} = 0.5 \times 3.8 + 0.2 \times 12.4 = 4.38$	MICONSTRUCTION OCCUPIED CONTROL HIS PROMISSION OCCUPIED CONTRO
**************************************		
n et til framska til til til skall ska		mcnerocococococococococococococococococococ

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4(a) X_{t}^{2} = O_{t}^{2} + X_{t}^{2} - O_{t}^{2}
                             = 0.1 + 0.2 \times_{t-1}^{2} + 0.3 \times_{t-2}^{2} + 0.35 \times_{t-1}^{2} + 0.35 \times_{t-1}^{2} + 0.35 \times_{t-1}^{2}
                            = 0.1 + 0.2 \times t_{-1}^{2} + 0.3 \times t_{-2}^{2} - 0.35 (X_{t-1}^{2} - 0_{t-1}^{2}) + 0.35 \times t_{-1}^{2} + X_{t}^{2} - 0_{t}^{2}
= 0.1 + 0.55 \times t_{-1}^{2} + 0.3 \times t_{-2}^{2} + V_{t}^{2} - 0.35 V_{t-1}^{2}
                    where \sigma_{t} = X_{t}^{2} - \sigma_{t}^{2} = \sigma_{t}^{2} (\xi_{t}^{2} - 1) ARMA(2,1)
                (b) E(X_{t}^{2}) = 0.1 + 0.55 \overline{E}(X_{t-1}^{2}) + 0.3 \overline{E}(X_{t-2}^{2})

=> E(X_{t}^{2}) = \frac{0.1}{0.15} = \frac{2}{3}
                         E(\sigma_t^2) = E(X_t^2) - E(V_t) = 2/3
            (c) C_{oV}(X_{t}^{2}, \sigma_{t-1}^{2}) = E(X_{t}^{2}, \sigma_{t-1}^{2}) - E(X_{t}^{2}) E(\sigma_{t-1}^{2}) We only need to calculate E(X_{t}^{2}, \sigma_{t-1}^{2})
E(X_{t}^{2}, \sigma_{t-1}^{2}) = E(E_{t}^{2}, \sigma_{t-1}^{2}) = E(\sigma_{t}^{2}, \sigma_{t-1}^{2}) = E((\sigma_{t-1}^{2}, \sigma_{t-1}^{2}) + \sigma_{t-1}^{2}) = E((\sigma_{t-1}^{2}, \sigma_{t-1}^{2}) + \sigma_{t-1}^{2}) + \sigma_{t-1}^{2}) + \sigma_{t-1}^{2}
= 0.1E(\sigma_{t-1}^{2}) + 0.2E(X_{t-1}^{2}, \sigma_{t-1}^{2}) + 0.3E(X_{t-2}^{2}, \sigma_{t-1}^{2}) + 0.35E(\sigma_{t-1}^{2})
   = 0.1E(\sigma_{t-1}^{2}) + 0.2E(\sigma_{t-1}^{4}) + 0.35E(\sigma_{t-1}^{4}) + 0.3E(X_{t-2}^{2}\sigma_{t-1}^{2})
           = 0.1 E (Ot 2) + 0.55 E (Ot -1) + 0.3 E (Xt-20+2)
              We need to calculate E(O++,) and E(X+-> O+->)
             From 4(a), we use Yule-Walker equation to deal with ARMA(2,1) model
        D = (X_t^2 X_{t-1}^2) = 0.1 E(X_{t-1}^2) + 0.55 E(X_{t-1}^4) + 0.3 E(X_{t-1}^2 X_{t-2}^2) + 0.35 E(V_{t-1}^2)
       (3) E(X_t^4) = 0.1E(X_t^2) + 0.55E(X_t^2X_{t-1}^2) + 0.3E(X_t^2X_{t-2}^2) + E(U_t^2) - 0.35E(V_{t-1}^2)
       (3) E(Xt2 Xt2) = 0.1 E(Xt2) + 0.55 E(Xt2 Xt2) + 0.3 E(Xt2)
               Since X_t^2 and is stationary, E(X_t^4) = E(X_{t-1}^4) = E(X_{t-2}^4), E(X_t^2 X_{t-1}^2) = E(X_{t-1}^2 X_{t-2}^4)
                For E(V_t^4) we have E(V_t^4) = E(O_t^4(\xi_t^2 - 1)^2) = E(O_t^4) E(\xi_t^4 - 2\xi_t^2 + 1)
                Since \mathcal{E}_t \sim \mathcal{N}(0, 1) \mathcal{E}(\mathcal{E}_t^4) = 3 \mathcal{E}(\mathcal{E}_t^2) = 1
               For E(O+4), we have E(O+4)= E[(0.1+0.2 X+2+0.3 X+2+0.35 O+2)2]
            = E(0.01+0.04X+2, +0.04X+4, +0.09 X+2+0.21 X+2 0+2+0.12×5+4+0.06 X+2+0.12 X+2 X+2
                  + 0.07 0+2, + 0.14 X+-7 0+2, ]
            = 0.0| + 0.1 E(X+2) + 0.13 E(X+4) + 0.2| E(X+2) X+21) + 0.1225 E(O+4) + 0.12 E(X+2) + 0.07 E(O+2)
                +0.14 E(Ot4) 5
To solve 0-5, we can get E(O_{+}^{4}) and E(X_{+2}, O_{+-1}^{2}) = E(X_{+2}, X_{+-1}^{2})

(d) \log \{f(X_{1}, \dots, X_{4}, | f_{0})\} = -\frac{1}{2} \log (2\pi) + \sum_{t=1}^{2} -\frac{1}{2} \log O_{+}^{2} - \sum_{t=1}^{2} \frac{X_{t}^{2}}{O_{+}^{2}}
        0=0.1 0=0.1+0.2×1.32+0.350=0.473
                 0=0.1+0.2×0.12+0.3×1.32+0.35×0 522=0.7746
                 Ou = 0, 1 + 0, 2x 2-2 + 0.3 x0, 12 + 0-35 x 03 2 = 1-3421
```

5. 
$$W_{t} = \int_{j=0}^{\infty} (-\theta)^{-j} X_{t-j} = \sum_{j=0}^{\infty} (-\theta)^{-j} [Z_{t-j} + \theta Z_{t-j}]$$

$$= \sum_{j=0}^{\infty} \{ (-\theta)^{-j} Z_{t-j} + (-\theta)^{-j+1} Z_{t-j-1} \}$$

$$= Z_{0} + \int_{j=0}^{\infty} [-(\theta)^{j+1} Z_{t-j-1}] Z_{t-j-1}$$

$$= Z_{0} + \sum_{j=0}^{\infty} [-(\theta)^{j+1} - (-\theta)^{-j+1}] Z_{t-j-1}$$

$$= Z_{0} + Z$$