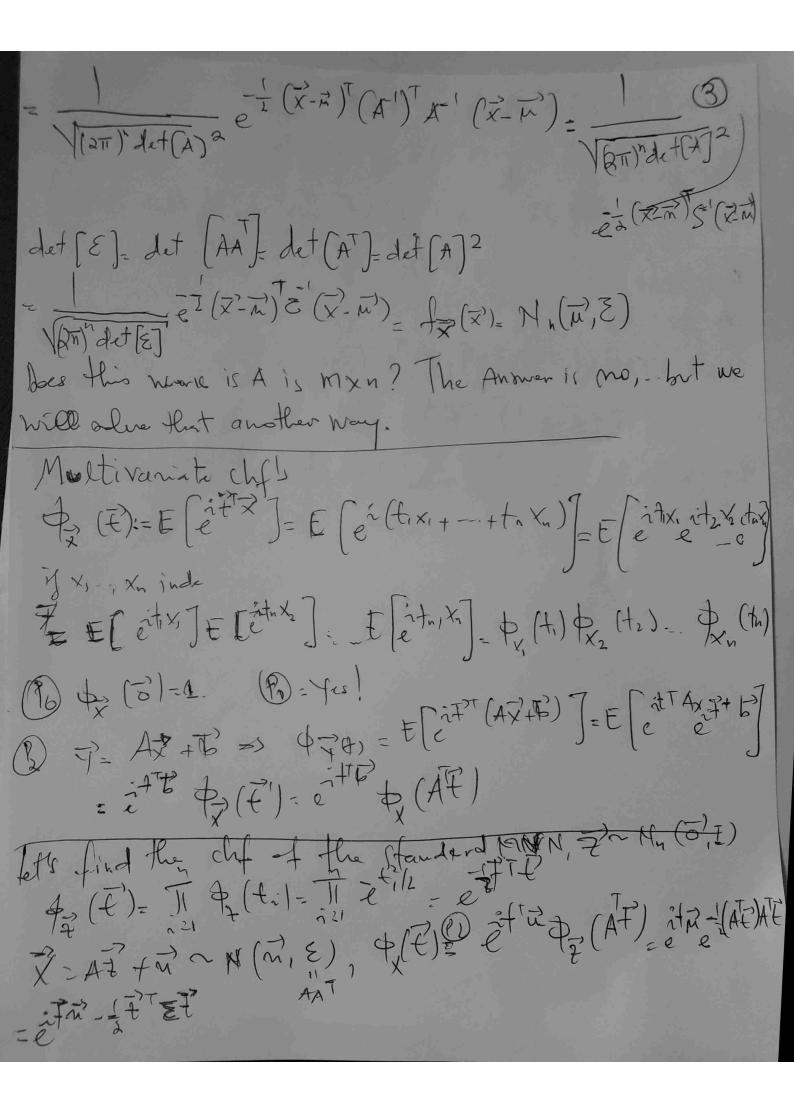
X-M /2~(91) Monday November 23rd 2020 Lecture 20

X-M = Due to cochrans thm, of x-is one iid N(Mu, sigs) =>

X and S<sup>2</sup> are independent and thus numerator and dens ainstor here are underpendent THE MULTIVARIATE HORMALTY (MYK) 6,12 Cov [x, x2]: Cov [t, 7,+t], Cov [t, t] + Cov [t, t2]=1+0:1 General Rule to figure out variance. Covariance matrix
of a matrix of times ry vector x',



Zan/12 (3 61) 7-4742, B+12" (3 611" (FE) 3 (FE) 1- (FE) 2 5 FG (FF) 1 - ( M. ( 1 - M) ( 1 - M) 2. ( M. M) - 3 Assume : AXT (AAT) (AT) A" (X-2) (AT) (AT) (X-2) = (A"(Z-W)) (A+X-W)) 7-1(3) = 2+2-X2 Mahadanbis Distance (1982)