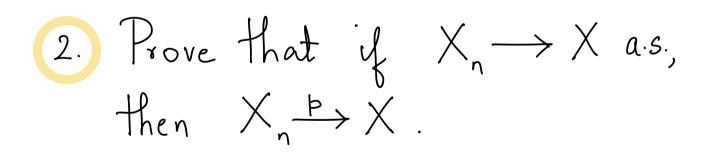
ASSIGNMENTI

T.) Find a continuous 9.V. that does not have a density function.



$$M_{\chi}(\theta) = |E[e^{\theta \chi}]$$

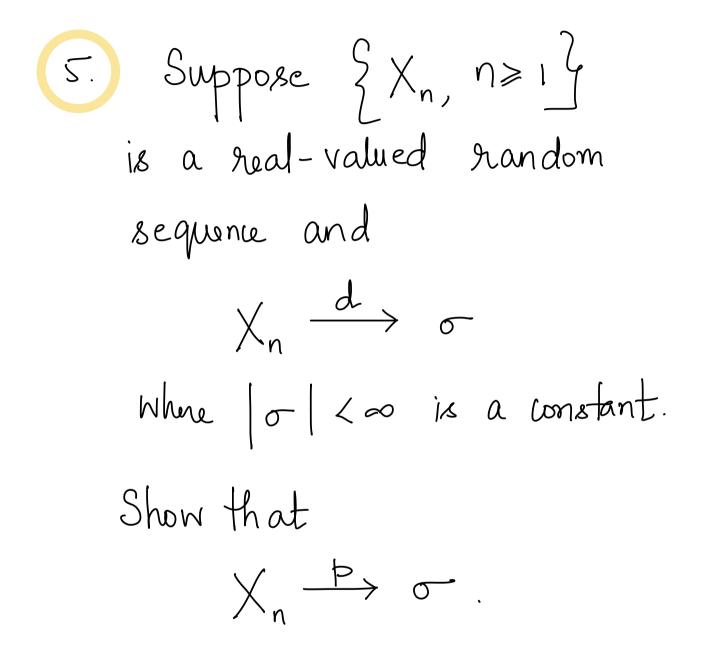
exists for all $\theta \in \mathbb{R}$

(a) Use the Markov inequality to
derive the Chernoff bound:
for non-negative X
$$P(X \ge t) \le M(0) e^{-t0}$$

(1)
(b) Specialize (1) for X ~ Poisson(2).
Find the value of 0 that
gives the best bound in (1).

4.(a) Give an example of a Markov process that is not a martingale.

(b) Give an example of martingale that is not a Mankov process.



6. (a) Give an example of a covariance stationary process that is not Markov.

(b) Give an example of a Mankov process that is not covariance stationary.

