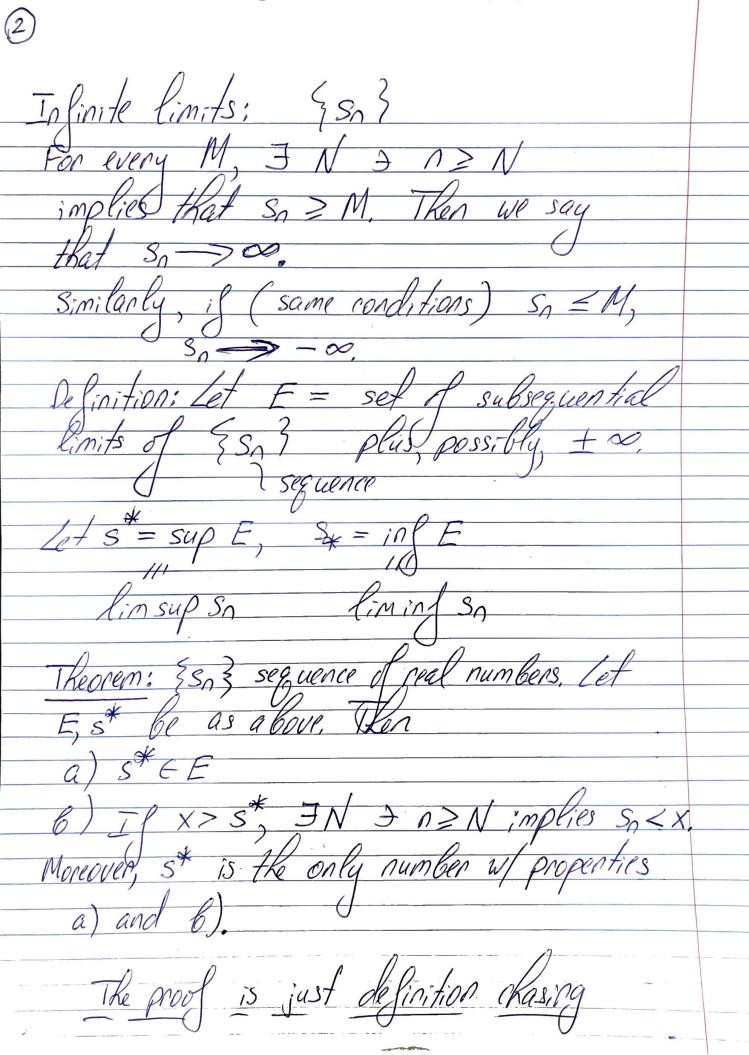
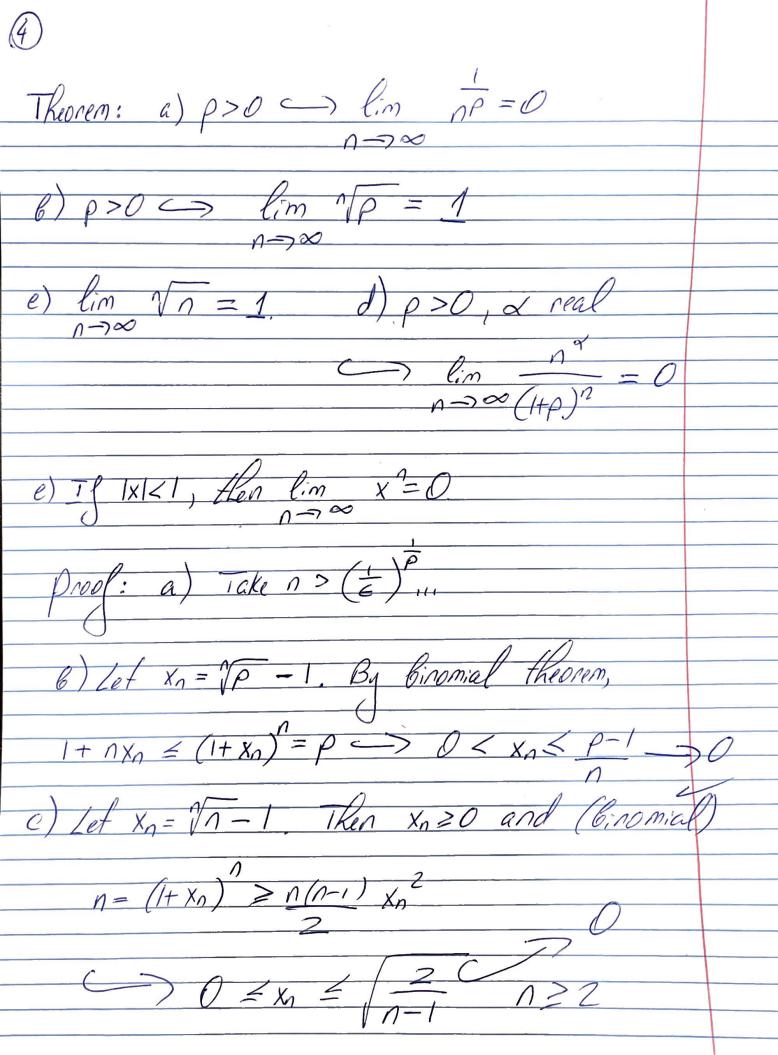
Math 265H, Fall 2022 October 19 Definition: A metric space in which every aucky sequence converges is called conf ) monotonically increasing Theorem: 35n3 monotorie. Then converges iff it is bound Proof: Suppose Sn = Sn+1 9, It follows that 3n = 3 (n=1,2, ...) For every e>0, there is N > 0 3-62 SN = S Since S= Ru, 6  $S_n \longrightarrow S$ 



3	,	
	a) -B)	Examples: $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$ $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$ $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$ $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$ $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$ $\frac{2}{2} \times n^{2}$ $\lim_{n \to \infty} d_{n} = +\infty$
	<i>c</i> )	$\lim_{N \to \infty} S_n = 1,  \lim_{N \to \infty} S_n = -1$ $\lim_{N \to \infty} S_n = \lim_{N \to \infty} S_n = \lim_{N \to \infty} S_n = S_N$
		Theorem: If $s_n \neq t_n$ for $n \geq N$ , $N$ fixed  then $t_{im} s_n \neq t_{im} t_n$ $t_{im} s_n \neq t_{im} t_n$



(3)	//
	d) Kinteger closer & K>X, K>O.
	arkinitger (Roser) o Reg Rev.
	For n > 2K,
	101 11 CK
	$(Hp)^{n} > (n)p^{k} = n(n-1)(n-k+1)$
	$\left( \frac{1}{K} \right) = \left( \frac{1}{K} \right) = \frac{1}{1} \left( \frac{1}{1} - \frac{1}{K} + 1 \right)$
	K.
	$\frac{n\rho}{2^{\kappa}\kappa!} \stackrel{\sim}{=} 0 \stackrel{\sim}{=} \frac{n}{(1+\rho)^n}$
	$\frac{2K}{(1+\alpha)^n}$
	2 R.
	K
	$\frac{2K!}{\rho^K} \stackrel{\alpha^{-K}}{\cap} = 0$
	$\rho^{K}$ $\gamma \rightarrow \infty$
	e) d=0 in $d$
	Socies: a sequence of real numbers
	Series: an sequence of real numbers
	C = 2 C 1 C = 2 C 1 to
	$S_n = 2 a_{ik}$ $1 S_n \rightarrow S finite,$
	K=1 0
	then I ax is said to converge.
	K=1