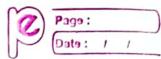
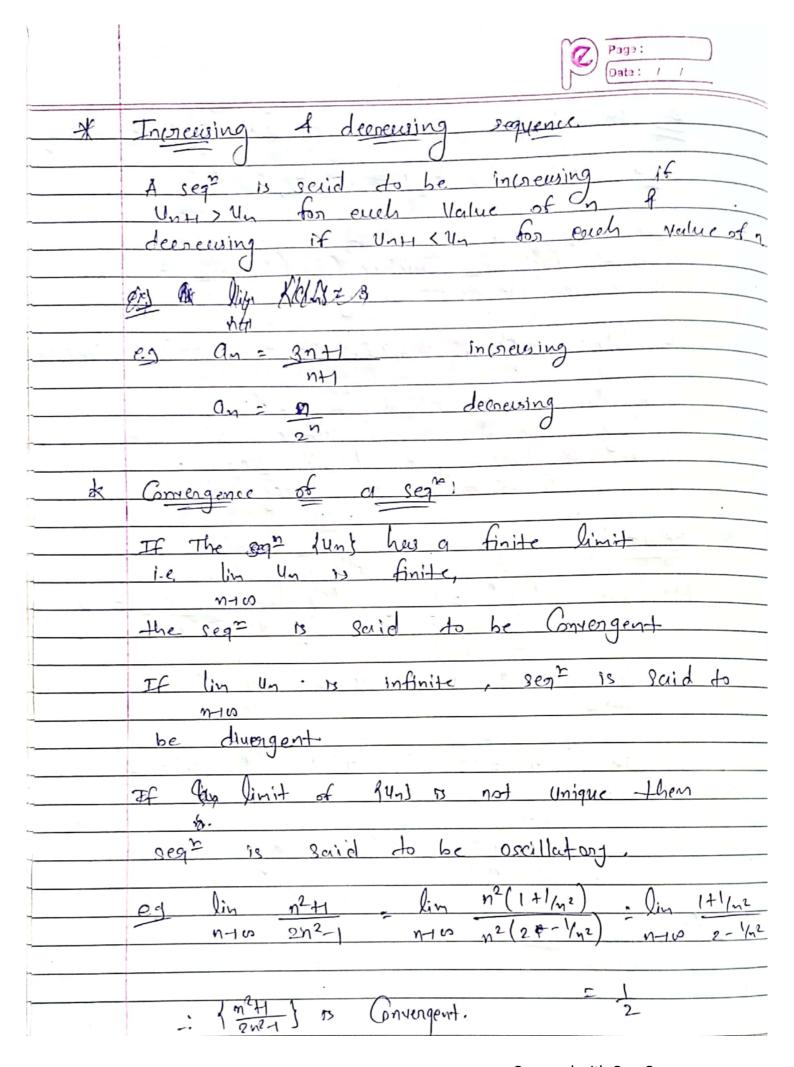
Soires & Sequence



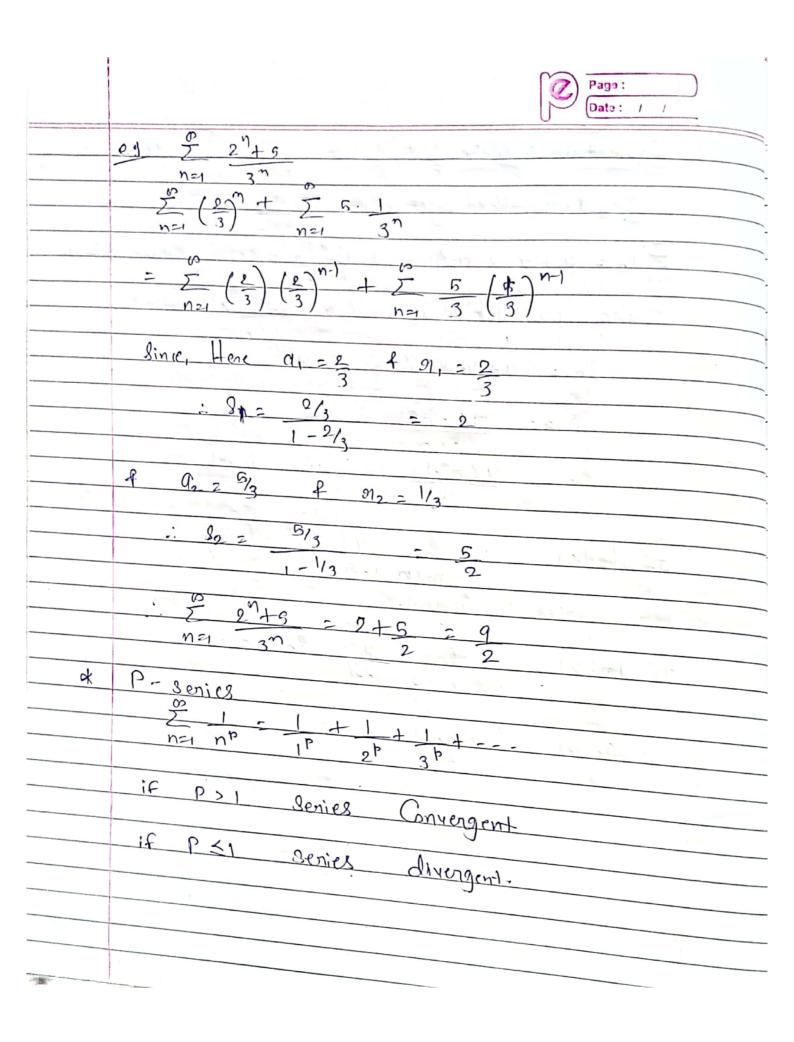
	J = Sats. 7
Defr.	sequence: An ordered set of new numbers
	is sequence.
	i.e if U, ue, U3, 13 ondered set
	orf neal number the segt is denoted
	by dung where on is not term of sage
	Examples of seg":
(1)_	12,4,6,8, 5 = 10,5 n=1 where On = 24
(2)	4-1, -1, -1, -1, 5 = dans = where an = (1)
	Mod Net gladde
Def ?	Senies! It is an infinite sum of numbers
	of a sequence.
	It is denoted by $\sum_{n=1}^{\infty} a_n = a_1 + a_2 + a_3 + \cdots$
	0 n=1
	e.9:
	(1) 2+4+6+8+ = = = = = 2 2n
	η=1
	(2) (4) H + (1) + 1+ = = = (H)
	74
*	Convergence of a sequence:
	A sequence dant is Called Convergent
	if it's term stearches to a number
	d) n heave langer & 1
	otherwise it is colled divergent sequence
	omenoise it is collect divergent sequence

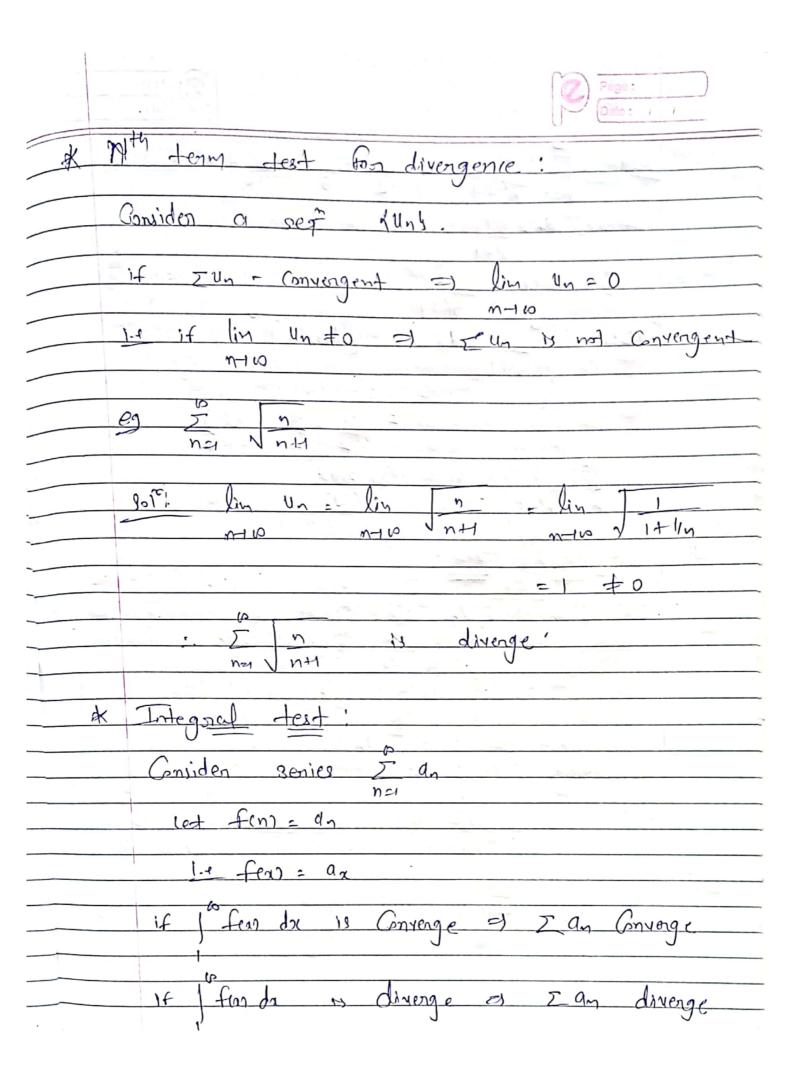


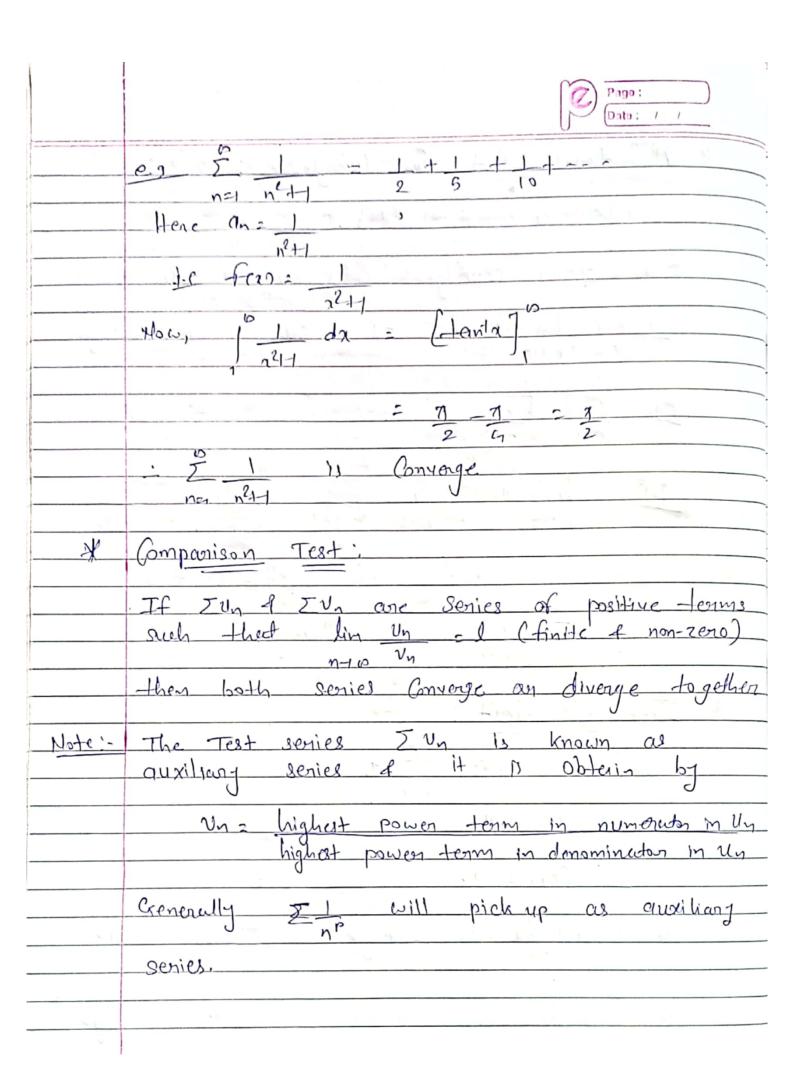
	eg (1) Consider the sequence days where an= 2
	$[2] \{a_{n}\} : \{0, \frac{2}{3}, \frac{2}{3}, \frac{2}{5}, \dots \}$
	one con observe that as a become larger the terms of squence appropries to zero. Therefore, it is convergent
	(0) (on) = delli 29,4,6,8, 3 . where on= en
	One (in observe that as n become langer of burger the term of sequence also got lunger of lunger, it doesn't approache to ony number. Therefore it is divergent.
¥	Proudo!
	(1) $\lim_{n \to \infty} (n)^{\frac{1}{n}} = 1$ (3) $\lim_{n \to \infty} \frac{\log n}{n} = 0$
	(2) $\lim_{n\to\infty} \alpha^{1/n} = 1$, $\alpha > 0$, α is fixed no.
	(3) $\lim_{n\to\infty} \alpha^n = 0$, $ \alpha (1)$, $\lim_{n\to\infty} \alpha^n = \infty$ if $\alpha(2)$
	(B) Jim x" = 0 (amy x)

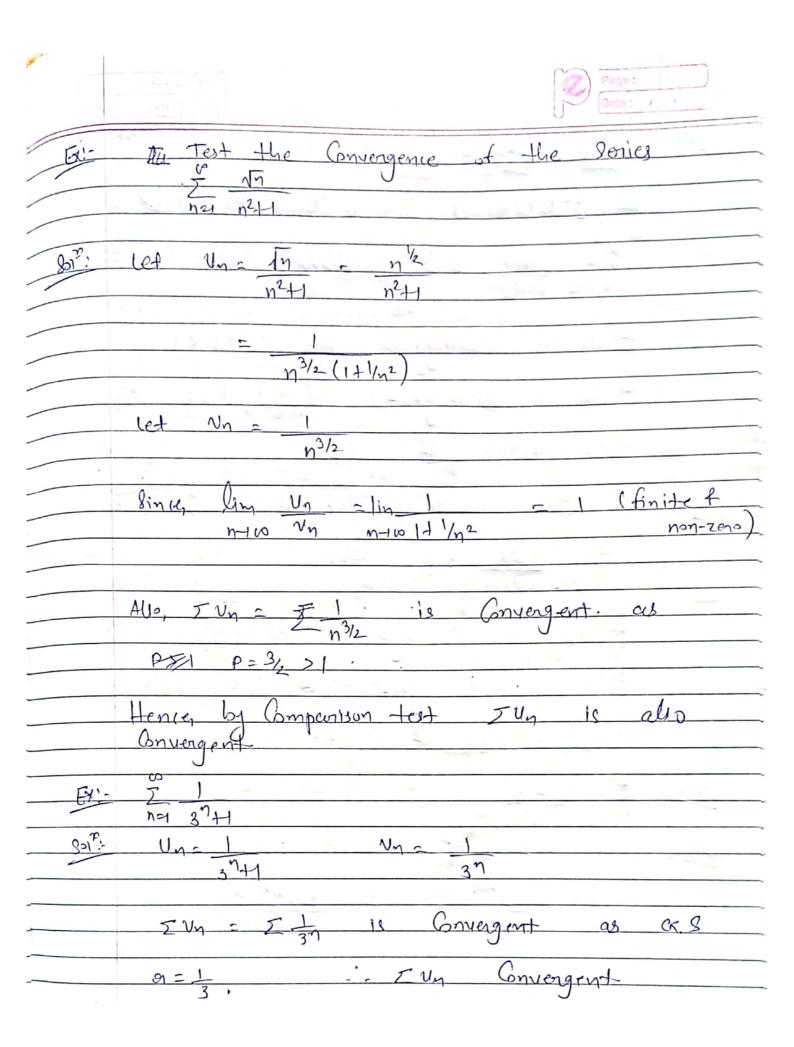


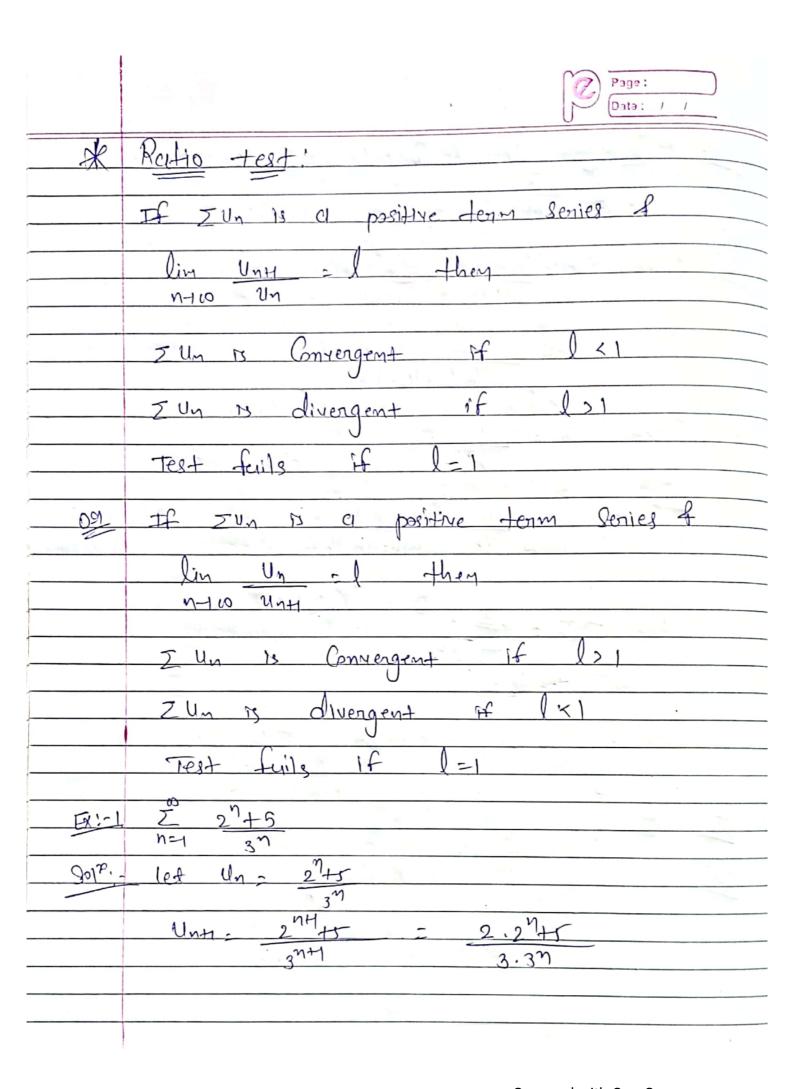
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*	Geometric series:
	Consider the germetric Series
	Zun = a + an + an2+ + an + + , where un = an-1
	Take partial Sum (sum of nth term)
	Qn = a+an+an2+ + an1-1
	Sn 1 = Ω(1-πn) if π<)
	$\frac{9n = \alpha(3^{n}-1)}{3n-1}$ if $n>1$
	If 91/K1 : In of is finite - n-100 1-27.
	· Senies Convergent
	If 1 > 1 = lin 3n = 00
	: Jenies divengent
-	

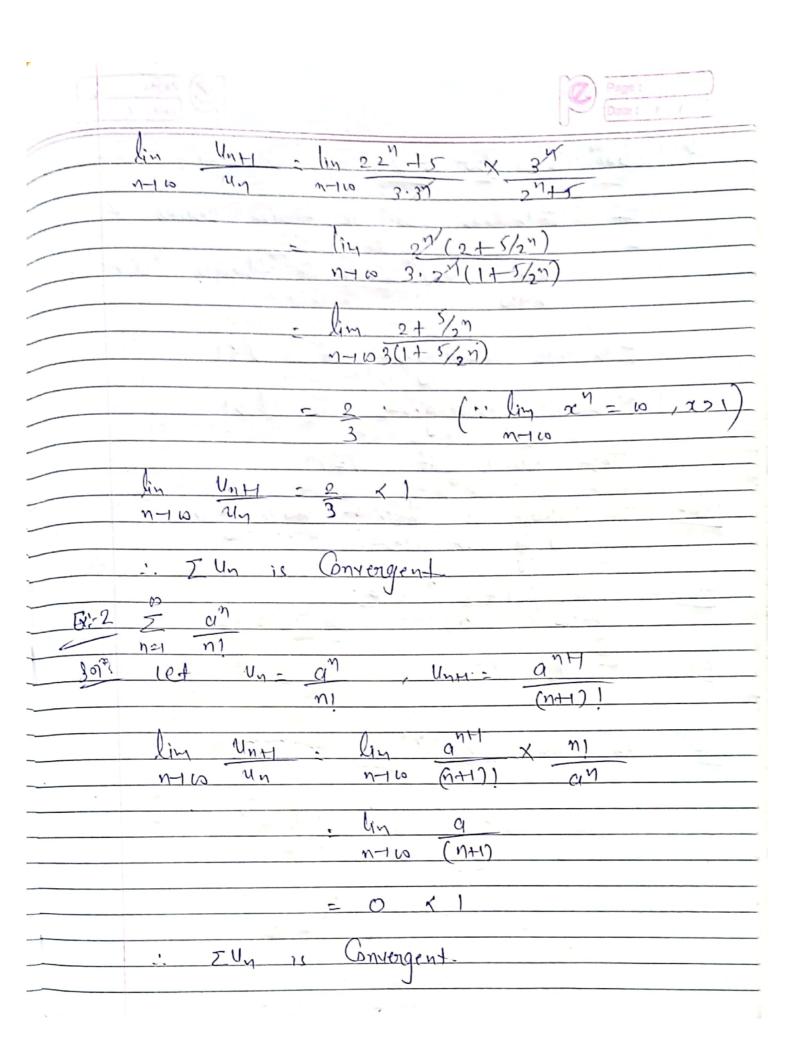


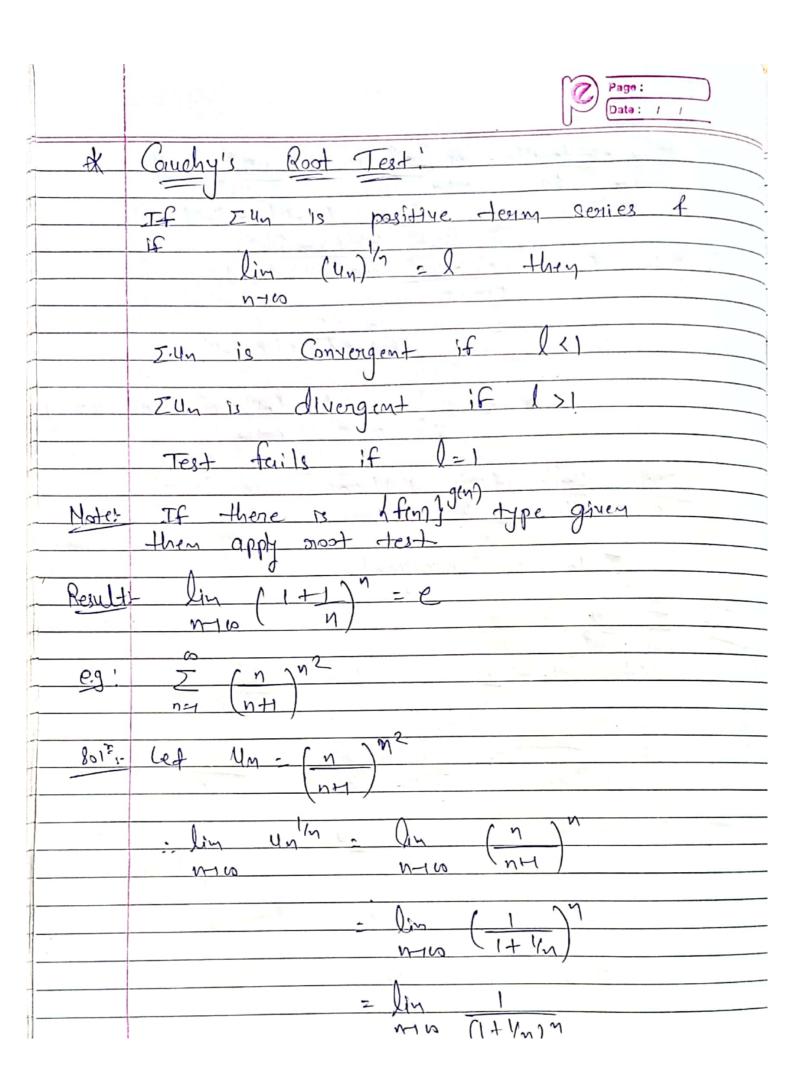


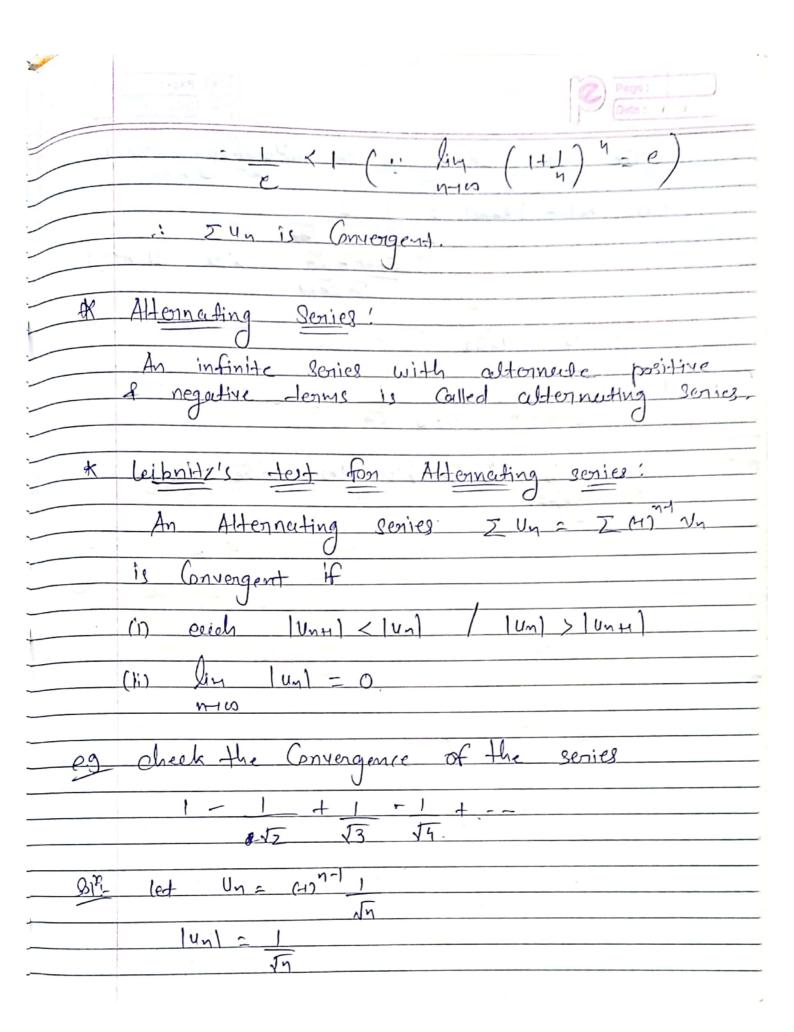












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The given series is an alternating series.
$(i) u_{\eta} - u_{\eta + 1} = 1 - 1$ $\sqrt{\eta} = \sqrt{\eta}$
 - Int - In > 0 4 nAN
: Un > Un+1)
(ii) lin 10n1= lin 1 = 0
Hence, by Beibnitz's test, the socies is Convergent.