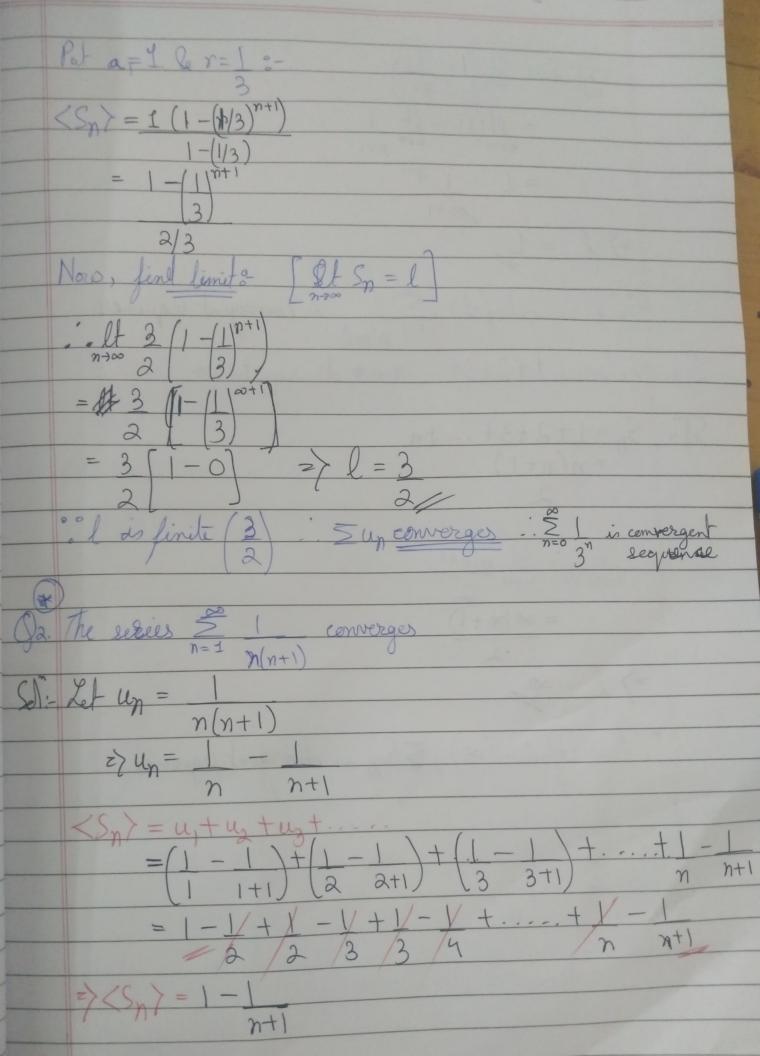
Test for Convergence o · If It Sn = I and I to finite Then & Sun converges · If It Sn=+00 or -00 then :- Zun diverges where, un = < Sn} 1. The series \$\frac{5}{n=0} \frac{1}{2^n} converges Sol:- Let un = 1 < Sn? = 40 + 41 + 42 + 43 + .... + 1 + 1 + 1 + ....  $= a + ar + ar^2 + ar^3 + \dots$   $\geq \langle S_n \rangle = a(1 - r^{n+1})$  $a=1, r=\frac{1}{3}$ Sn = a(1-m) [1>r



"It  $S_n = It (1 - 1)$   $n \to \infty$   $n \to \infty$   $n \to \infty$ = lf(1) - lf 1  $n \to \infty$  n + 1=> l = 1 of infinite (1), \$ 1 is convergent sequence Q3. The series 1+2+3+...+n# diverges to as  $S(:- S_n = 1 + 2 + 3 + ... + n)$ = n(n+1) $\frac{1}{n+\infty} \int_{n}^{\infty} = \int_{n+\infty}^{\infty} \frac{h(n+1)}{2}$   $= \infty (\infty + 1)$ => 1 = 0 · l is infinite (as), \$5 sp is divergent sequence