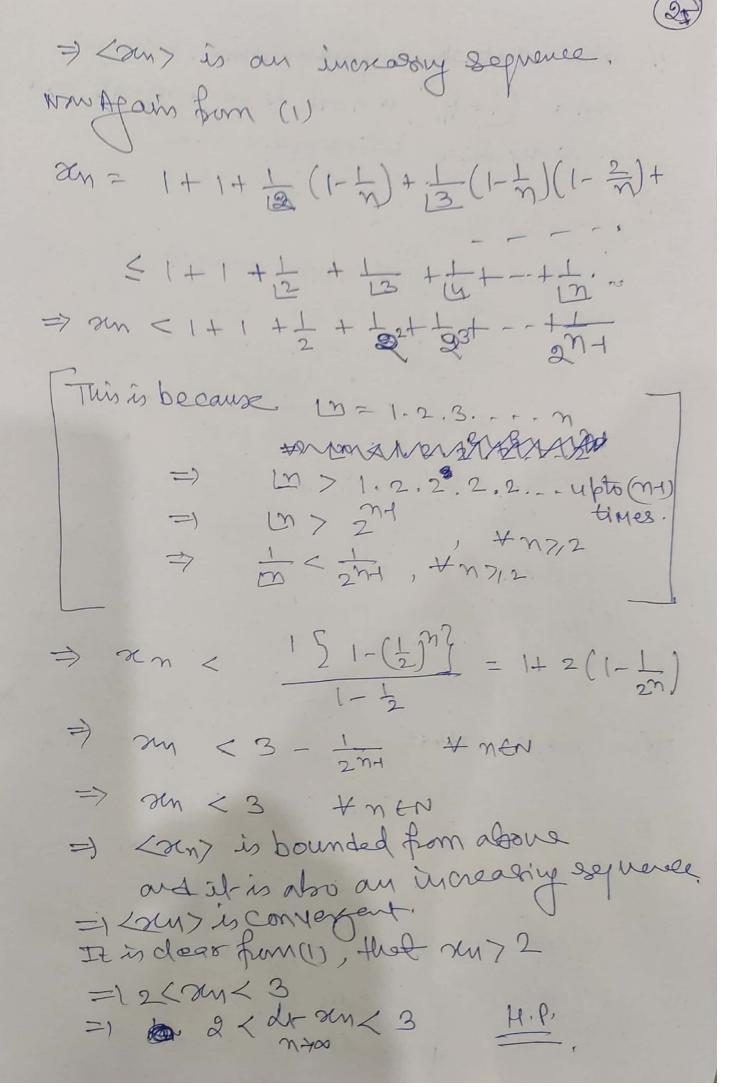
(9) Share that the segnence (sin), hehere sen = (1+1), + nEN is convergent and it's limit lies between 2 and 3. Given that sen = (1+1), + new, then weigh Binomial Theory, metalo sen = 1+ n(\frac{1}{n}) + n(\frac{1}{n})^2 + n(\frac{1}{n}) + \frac{1}{13} + - -- : Tim(n-1)(n-2) - · (n-(n-1))(+) =) xm= 1+1+1=(1-m)+1=(1-m)(1-m)+--- + + [m (1-m)(1-m)+--1+1+1 +1 (1-11)+1 (1-11) (1-2)+ $---+\frac{1}{1}$ $(1-\frac{1}{n+1})(1-\frac{1}{n+1})-(1-\frac{n}{n+1})$ Here, we know that my m =) - - < - \frac{1}{M} ⇒ - 1 > - 1 一(一加)>(一加), Similarly (1-12) > (1-14) - (4) woing (3) 2(4), we can see that anti > an + nen



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91 Prue fut the sequere 2 mg is convergent (26) 22 = 1 (21+1) $2(2-2) = \frac{1}{2}(2(1)-24) = \frac{1}{22(1)}[1-2(1)]$ =) x2-24 >0 if x1 < 1 =) n27, 24 if 24 <1 - (1) Similarly 20 m+1 - xn = = = (xn+ 2m) - 24 => 2 m+1 >, 2 m is 2 m/5 | 2 mm > 0 is 2 m/5 | =) The sephere Low is monotonically in creating is on El and decreating is sun>1 Fren. For both the cases it is monotonic and bounded. => It is convergent let At xin = f Now Lingen = Lin I (sent sen) $m + \infty = \frac{1}{2} \left(2 + \frac{1}{2} \right)$ -> 2 e = 2+1 => e = 1 => l= ±1 But l+-1: 2m>0