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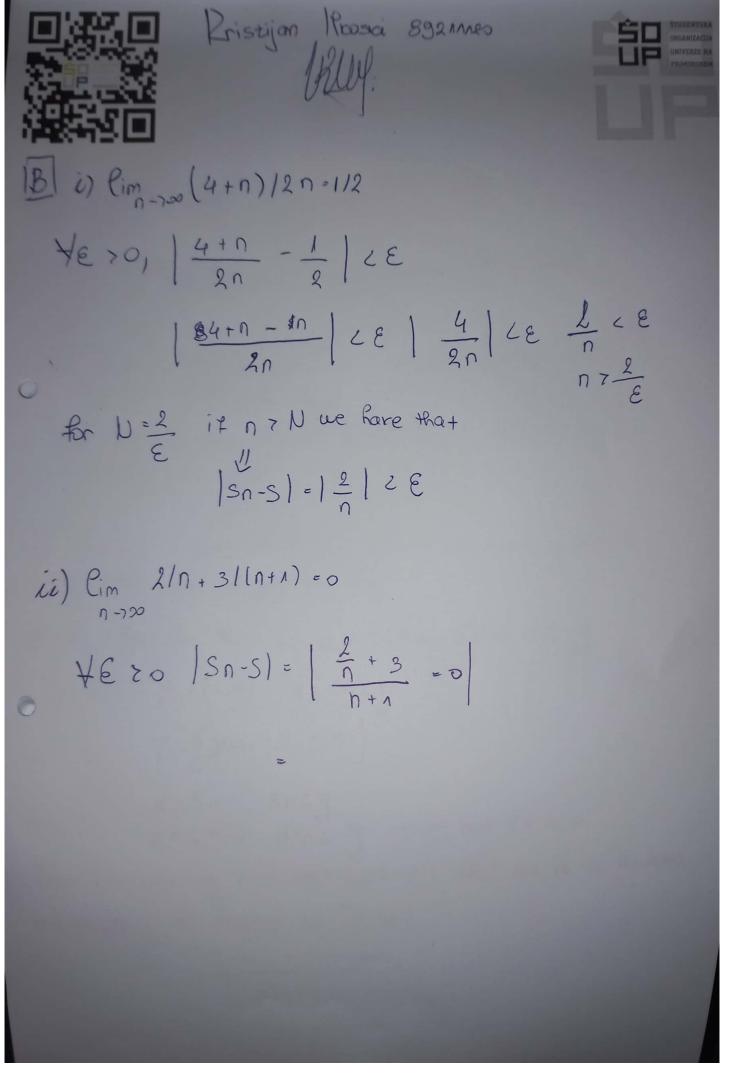


用山

Then we take
$$6 = \frac{1}{N^5}$$
 $0 < \frac{1}{n^5} < \frac{1}{N^5} = 7 \left| \frac{1}{n^5} < 0 \right| = \frac{1}{n^5} < \epsilon$

$$|\frac{1}{5\sqrt{n}} - 0| = \frac{1}{3\sqrt{n}} < \varepsilon$$

then we take
$$N = \frac{1}{\varepsilon^5}$$
 s.t. $N7N$ $N7\frac{1}{\varepsilon^5} = 7\frac{1}{\sqrt{5}}$ $2\varepsilon = \frac{1}{\sqrt{5}}$





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(Sn) Itn) sn=tn copec except some values of n

Let Sn and to Be the Cost different elements. then we have 4E > 0; n > Nsm = 7 | Sm-S | < Eand n > Ntm => | tm-s | LE

e we take N= max (Nsm, Ntm) s.t.

N>N2=> |sm-s) < E => 1tm-s| < E

So now we have No=N+1 for which 2n > No = 7 | Sm-S| < EBut now we know that Sn=2n > 0: 2n > No = 7 | 2n - S| < E

n 7 No => | to-s/ce 6 for No = N+1



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Di) (Sn), (tn) Counded sequences. S.t. Sn and to are Counsed |Sn+tn) = |sn+tn) = |sn+tn)

- (|sn+1tn)) < |sn+tn| < |sn+1tn)

so, every element of (Snttn), even the Biggest one, will have a Bigger number in IsnI+Itn) (which are numbers from a Bounded set)

And that also goes for it's least element that always has a smaller or agual - (Isn)+ | tn1).

u) Son hos a range which is a Gourded set containing of the possible values we can get from Son.

X=R Per's say that the set is bounded by x and y.

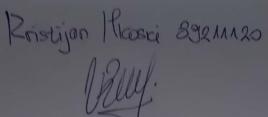
S=(x,y) XESney T-{NSn:SnES}

X < Sn Sn < y meaning that x x is a lower board and any is an upper bound of T which now is a bounded set containing all elements of (x.Sn)

Thus (x.Sn) is bounded.

CS CamScanner







(E) () (im Sn -5

aeR

prove s > q

OSSUME SZQ

€ 70

Sm is the Giggest element that Sm La

1>m. =7 Sn >Sm

| Sn-S) CE 5-ECSCS+@€

5n7S-E

Sn LS+E

Sm29 Since Ezo and azs we can tate E to (*) Sn79 Ge as small as a-s

than we have that $Sn \leq 10 - 5 = 0$ But (*) States otherwhise and that makes Snnot the Biggest element less than 0

(sn)

example: let (sn) be the sequence 1

Cim I = 0

4E 20 N 2N = 7 | 1 -0 | CE | 12E | 12En

 $N = \frac{1}{\varepsilon}$ with suffice,

so we know the lim 1 =0

And also since neMt we have that I will always be positive so Sn 70