

2832

$$\leq A^* \delta \varepsilon + A^* \delta \varepsilon$$

$$+ A^* \sum_{j=n}^{n+p-1} (b_j - b_{j+1})$$

$$\leq 2 A^* \delta \varepsilon + A^* (b_n - b_{n+p})$$

$$\leq 3 A^* \delta \varepsilon$$

So let δ be any real no.

$$0 < 3 A^* \delta < 1.$$

Hence $\sum_{j=1}^n a_j b_j$ satisfies

the Cauchy criterion.

Therefore it converges.