nh partial sum Test =) Sn
$$(conv./Div)$$
 $lim Sn = L =) San = L$

$$\lim_{n\to\infty} S_n = \bigsqcup_{n\to\infty} = \sum_{n\to\infty} S_{n} = 1$$

$$\sum_{n=1}^{\infty} z^{n} = z + z^{2} + z^{3} + z^{4} + z^{5} + \cdots$$

$$a = z, r = z > 1 \Rightarrow div by$$

where the form

$$= 2$$
 , $r = 2 > 1 \Rightarrow div by the ferm$

$$\sum_{n=1}^{\infty} \frac{1}{2} + \frac{1}{3} + \frac{$$

$$a = \frac{1}{2} , r = \frac{1}{2} \in (-1,1)$$

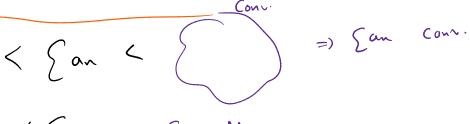
$$\frac{\frac{1}{2}}{1-\frac{1}{2}}=1$$

$$a = \frac{1}{2}, r = \frac{1}{2} \in (-1,1)$$

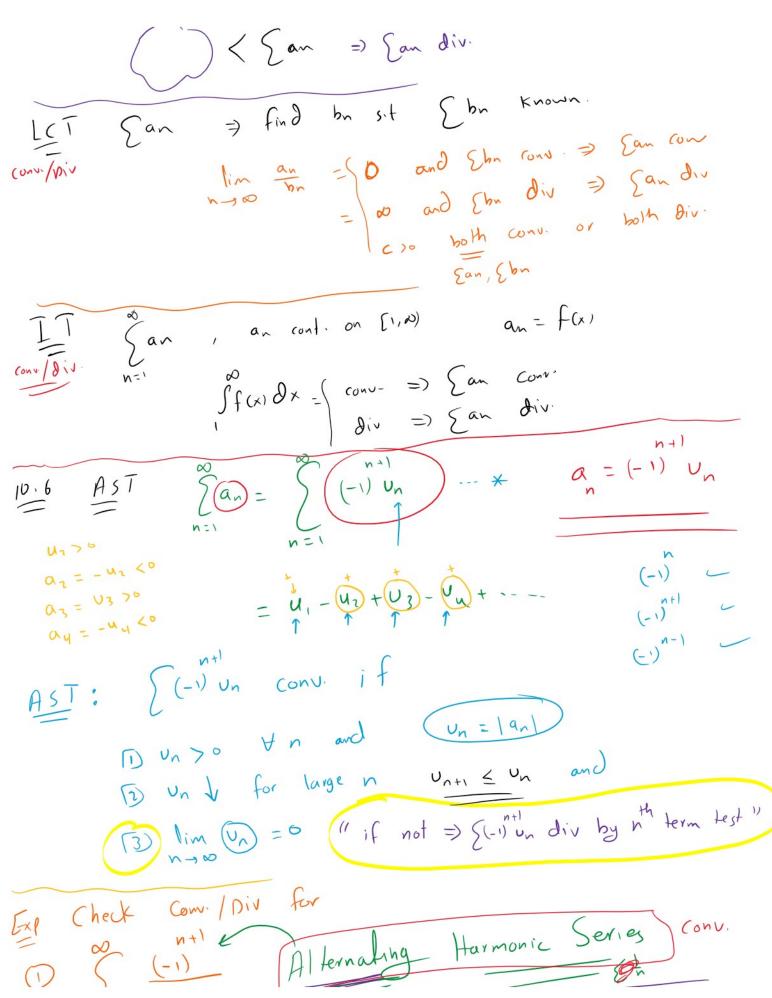
$$= \frac{1}{2} = 1$$

$$= \frac{1}{1 - \frac{1}{2}} = 1$$

$$= \frac{1}{1 - \frac{1}{$$



$$< \sum an$$



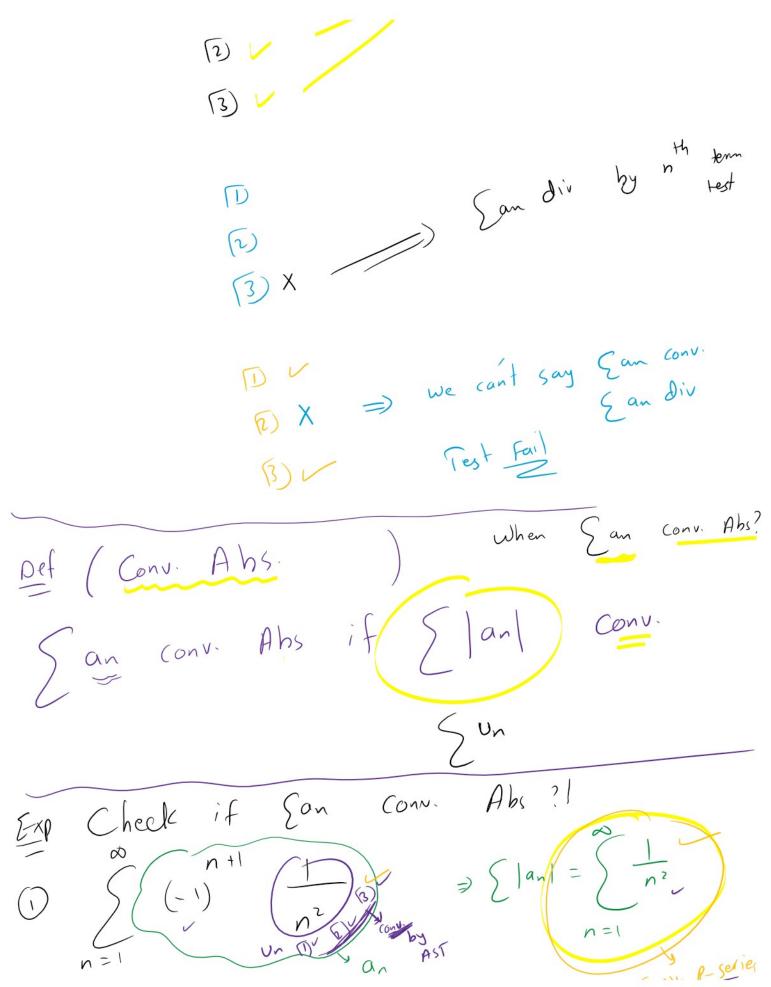
Apply AST Test
$$a = (-1)^{\frac{1}{2}} \frac{1}{n}$$
 $= (-1)^{\frac{1}{2}} \frac{1}{n}$ $=$

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$$(3) \sum_{n=1}^{\infty} (-1)^{n} n \text{ Alternaling } \Rightarrow \text{ Apply AST}$$

$$(3) \lim_{n \to \infty} (-1)^{n} n \text{ and } -1 \text$$



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