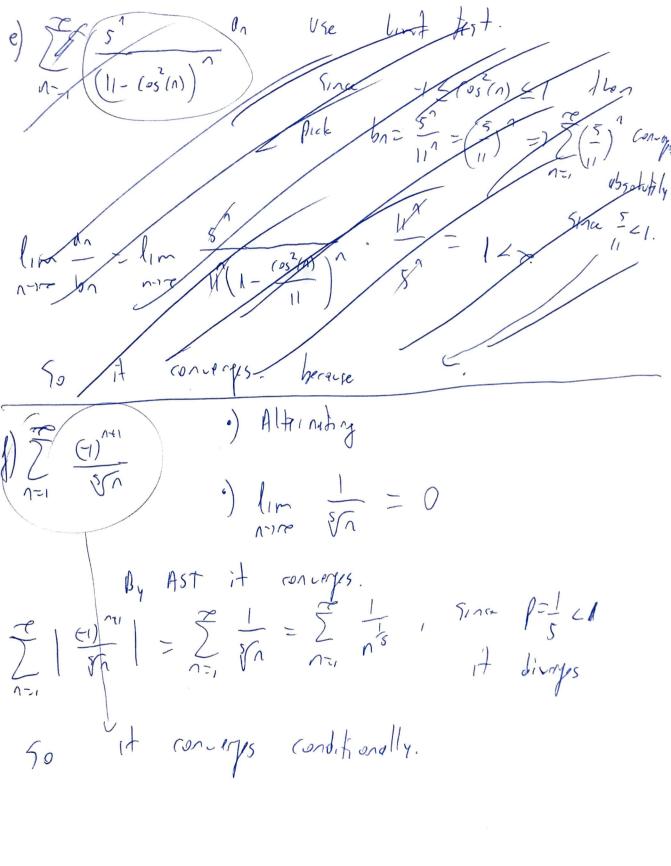
a) Assume that the following limit exists: $\lim_{n\to\infty} \left| \frac{a_{n+1}}{a_n} \right| = P$ If PCI, then the series Ion conveyes absolutely. if PII han I'm diverge, if P=1 the test is inconclusive. b) Assume the following limit exists: lim VIan1 = L. il L<1 Han the series I an conveyes obsolutely. if L71 then I an diverges. If L=1 the fist is Inconclisive. Eterise 3: a) $\frac{7}{\sqrt{3n^3+1}}$ Uge Road test, To it conveys $\lim_{N\to\infty} \sqrt{\left(\frac{3n^3+7n}{4n^3+1}\right)^2} = \lim_{N\to\infty} \frac{3n^3+7n}{4n^3+1} = \frac{3}{4} < 1$

Worksheet 13;

C)
$$\frac{2^{n}}{n!} = \frac{2^{n}}{n!}$$
 Use hatto kst.

 $\lim_{n \to \infty} \left| \frac{1}{n!} \right| = \lim_{n \to \infty} \left| \frac{2^{n}}{(n+1)!} \right| = \lim_{n \to \infty$



8) ((-1) (1/1/1)) (Im - 0) fine for nois , Pr(n=1) & n+1 then 0 = 1 = (n/n+1) =) To A diverges. it converges conditionally. a) No, the Divergnae Test does not test conseque. b) Yes, look definition. c) Folse, when limit is 1, the test is inconclisive. d) Yes e.) Yes.

e)
$$\frac{5}{2} \frac{5}{(1-(ox^{2}(n))^{n})}$$

The $\frac{1}{2}(\cos n) \leq 1$

then $0 \leq \cos^{2}(n) \geq 1$

so this mans that $11-\cos^{2}(n) \geq 10$

=) $\frac{1}{11-(ox^{2}(n))} \leq \frac{5}{10}$

=) $0 \leq \frac{5}{11-(ox^{2}(n))} \leq \frac{5}{10} = (\frac{5}{10})^{n}$
 $\frac{5}{10} = (\frac{5}{10})^{n} = \frac{5}{10} = (\frac{5}{10})^{n}$
 $\frac{7}{10} = (\frac{5}{10})^{n} = \frac{5}{10} = (\frac{5}{10})^{n}$
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To $\sum_{n=1}^{\infty} \frac{5^n}{(11-cos(n))^n}$ is convergent.