ID#__________ Name:______________ Quiz 5 MATH 102-T173 Serial#_____

You must write the name of test in your solution

Q1 Find the sum of series $\sum_{n=1}^{\infty} \frac{2^{n+1}3^{2-n}}{2^{2+n}}$ if it converges

Q2. Check if the series $\sum_{n=2}^{\infty} \frac{6}{\ln(n^8)}$ converges or diverges.

Q3. Check if the series $\sum_{k=1}^{\infty}(-1)^k(\sqrt{k+1}-\sqrt{k})$ converges absolutely, conditionally or it diverges.

Q4. Using the Alternating Series Estimation Test, find n so that S_n (the sum of 1st n terms of the series) approximate the sum of $\sum_{k=1}^{\infty}\frac{2(-1)^k}{k^{2/3}}$ up to 4 decimal places, (i.e., |Error| < 0.0005).

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You must write the name of test in your solution

Q1. Evaluate the limit of sequence $c_n = \sum_{k=1}^{n} \frac{1}{k^2+k}$. Then find the sum of the series $\sum_{k=1}^{\infty} \frac{1}{k^2+k}$

Q2. Check if the series $\sum_{n=1}^{\infty} \frac{n^2+3^n}{n+2^{2n}}$ converges or diverges.

Q3. Check if the series $\sum_{n=1}^{\infty}(-1)^n 2^{3n}\frac{(n-1)!}{\sqrt{(3n)!}}$ converges absolutely, conditionally or it diverges.

Q4. Using the Alternating Series Estimation Test, find n so that S_n (the sum of 1st n terms of the series) approximate the sum of $\sum_{n=1}^{\infty}\frac{2(-1)^n}{n^{2/3}}$ up to 4 decimal places, (i.e., $|\text{Error}| < 0.0005$).