Textbook section 11.4: Problem number 'Misc'

Pair the conclusion: "C" (converges) or "D" (diverges) with the FIRST test or reason below which gives this conclusion. For example, your answer is DP if the series is a divergent p-series (it is not a geometric series and the nth term test could not be used to confirm divergence).

N = The nth term test
G = It's a geometric series
P = It's a p-series, \( \sum \frac{1}{n^p} \)
C = Direct or Limit Comparison Test, compared to a multiple of a geometric or p-series
I = Integral Test
Z = None of the above

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\begin{align*}
\text{[1]} & \quad \sum_{n=2}^{\infty} \frac{1}{4 \ln n} \quad \text{DI} \quad \text{(limit comp. with } 1 = \frac{1}{n} \text{, p-series)} \\
\text{[2]} & \quad \sum_{n=1}^{\infty} \frac{n^2-1}{7^n} \quad \text{DN, DC, DI, ... (or test)} \\
\text{[3]} & \quad \sum_{n=1}^{\infty} \frac{5}{n \sqrt{n^2 + 1}} \quad \text{CC, CI } \left(\text{sub } x = 5 \tan \theta \right) \\
\text{[4]} & \quad \sum_{n=1}^{\infty} \frac{1}{\sqrt{n} \sqrt{n + 5}} \quad \text{DC, DI } \left(\text{sub } x = 5 \sec \theta \right) \left(\text{we must do inverse hyperbolic} \right) \\
\text{[5]} & \quad \sum_{n=1}^{\infty} \tan \left(\frac{1}{n} \right) \quad \text{DC } \left(\text{limit comparison w/ } \frac{1}{n} \right) \\
\text{[6]} & \quad \sum_{n=1}^{\infty} \frac{n + 4n}{n^2 + 4n} \quad \text{CC } \left(\text{after split at num, direct comp of 1st term w/ } \left(\frac{1}{n}\right)^n \right) \\
\text{[7]} & \quad \sum_{n=1}^{\infty} \frac{n^3}{n(n + 4)} \quad \text{DC, DI } \left(\text{sub } x = 4 \tan \theta \right) \\
\text{[8]} & \quad \sum_{n=2}^{\infty} \frac{1}{\sqrt{n^4 - 1}} \quad \text{CC, CI } \left(\text{sub } x = \frac{1}{4} \sec \theta \right)
\end{align*}
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Note: To get full credit, all answers must be correct. Having all but one correct is worth 70%. All but two correct is worth 50%. Three or more incorrect answers gives a grade of 0.

Edit this problem

Show correct answers

Previous Answers, Check Answers, Submit Answers for brooksca

You have attempted this problem 0 times.
This homework set is closed.