Worksheet 13
11/21/2023

Use a suitable test (Divergence/Integral/Comparison/Alternative Series/Ratio/Root Test) to identify if each of the following series conditionally converges, absolutely converges, or diverges.

(a) $\sum \left(\frac{1+n}{1+2n} \right)^n$

(b) $\sum \left(\frac{1-2n}{1+n} \right)^{2n}$

(c) $\sum \frac{3^n}{n!}$

(d) $\sum \frac{(-4)^n}{3^n n^2}$

(e) $\sum \left(1 + \frac{1}{n} \right)^{-n^2}$

(f) $\sum \frac{3^n}{2^n \ln n}$

(g) $\sum \frac{\sqrt{n}}{3+2n^2}$

(h) $\sum \frac{(-1)^n}{\sqrt{n}}$

(i) $\sum \frac{\sin(n^2)}{n^2-n}$

(j) $\sum \frac{(-1)^n}{\ln n}$