

1). $\sum_{n=1}^{\infty} (-1)^n \frac{1}{4n-1} = \sum_{n=1}^{\infty} a_n$, where $a_n = (-1)^n \frac{1}{4n-1}$

a) Apply the Comparison Test to $\sum_{n=1}^{\infty} |a_n|$.
Explain why this strategy fails in this case.

b) Use an appropriate test to determine convergence.

2). $\sum_{n=1}^{\infty} (-1)^n \frac{1}{4n^2+1}$

a) Apply the Comparison Test to $\sum_{n=1}^{\infty} |a_n|$.
Does this strategy work here?

b) Can you use the Comparison Test on $\sum_{n=1}^{\infty} a_n$ directly for either #1 or #2? Explain why or why not.