Math 1552, Integral Calculus

Section 10.4: Comparison and Limit Comparison Tests

Determine whether the following series converge or diverge. Justify your answers using any of the tests we discussed in class.

(1)

$$\sum_{k=1}^{\infty} k \tan\left(\frac{1}{k}\right)$$

(2)

$$\frac{1}{1 \cdot 3} + \frac{1}{3 \cdot 5} + \frac{1}{5 \cdot 7} + ...$$

(3)

$$\sum_{n=2}^{\infty} \frac{1}{n\sqrt{n^2-1}}$$

(4)

$$\sum_{k=1}^{\infty} \frac{\ln k}{k^4}$$