

Honors Math 182 Homework 10 Version A

1. Determine whether the following series converge or diverge and explain your answer.

(i)
$$\sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{\arctan n}$$

(ii)
$$\sum_{n=6}^{\infty} \frac{1}{2n(\ln n)^2}$$

(iii)
$$\sum_{n=1}^{\infty} \frac{n+1}{n!}$$

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2. Determine whether the following series converge or diverge and explain your answer.

(i)
$$\sum_{n=1}^{\infty} \frac{(n+1)(n+2)}{2^n}$$

(ii)
$$\sum_{n=2}^{\infty} \frac{\ln n}{n^2}$$

(iii)
$$\sum_{n=3}^{\infty} \frac{n}{(\ln n)^n}$$