

Math 8

Root Test Handout

Determine using the Root Test if the following sequences converge or diverge.

$$1) \sum_{n=1}^{\infty} (\arctan n)^n$$

$$2) \sum_{n=1}^{\infty} \frac{n^n}{3^{n^2}}$$

$$3) \sum_{n=1}^{\infty} \frac{\ln n}{e^{n+5}}$$

$$4) \sum_{n=1}^{\infty} \frac{1}{n + \sqrt{n}}$$

$$5*) \sum_{n=1}^{\infty} \sin e^{-n}$$