

Math 8

Ratio Test Handout

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

$$1) \sum_{n=1}^{\infty} \frac{n^{10}}{10^n}$$

$$2) \sum_{n=1}^{\infty} \frac{n^{20} 20^n}{n!}$$

$$3) \sum_{n=1}^{\infty} \frac{n!}{(n+1)!}$$

$$4) \sum_{n=1}^{\infty} \sin(e^{-n})$$

$$5) \sum_{n=1}^{\infty} \frac{1}{2n-1}$$

$$6) \frac{1}{2} + \frac{2}{3^2} + \frac{4}{4^3} + \frac{8}{5^4} + \dots$$