Math 101 – WORKSHEET 29 THE RATIO TEST

(1) If the series converges, find its sum. Otherwise, state that it diverges. (a) $\sum_{n=0}^{\infty} \frac{(-1)^n 3^{2n+3}}{11^n}$

(b)
$$\sum_{n=1}^{\infty} (-1)^{n+2} \frac{3^{3n+2}}{11^n}$$

- (2) Decide whether the following series converge: (a) $\sum_{n=0}^{\infty} \frac{n}{2^n}$
 - (b) $\sum_{n=0}^{\infty} \frac{n!}{2^n}$
 - (c) $\sum_{n=0}^{\infty} \frac{2^n}{n!}$
 - (d) For which values of x does $\sum_{n=0}^{\infty} nx^n$ converge?

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