

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

## DEPARTMENT OF MATHEMATICS AND STATISTICS

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SECTION 1.7

Math 2000 Worksheet

WINTER 2020

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**For practice only. Not to be submitted.**

1. Use any appropriate test to determine the convergence or divergence of each of the following series.

(a) 
$$\sum_{i=0}^{\infty} \frac{3^i}{3 + 7^i}$$

(b) 
$$\sum_{i=1}^{\infty} \frac{i^{\frac{1}{i}}}{\arctan(i)}$$

(c) 
$$\sum_{i=1}^{\infty} \frac{i!}{5 \cdot 9 \cdot 13 \cdots (4i + 1)}$$

(d) 
$$\sum_{i=2}^{\infty} \frac{(-1)^{i+1}}{i \ln(i)}$$

(e) 
$$\sum_{i=1}^{\infty} \frac{1}{i - i \cos^2(i)}$$

(f) 
$$\sum_{i=1}^{\infty} \left( \frac{2}{e^{-8i} - 1} \right)^i$$