

# MEMORIAL UNIVERSITY OF NEWFOUNDLAND

## DEPARTMENT OF MATHEMATICS AND STATISTICS

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SECTION 1.5

Math 2000 Worksheet

WINTER 2020

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

1. Use a Comparison Test to determine whether each of the following series converges or diverges.

(a)  $\sum_{i=0}^{\infty} \frac{5}{i^3 + 2}$

(b)  $\sum_{i=2}^{\infty} \frac{1}{i - \sqrt{i}}$

(c)  $\sum_{i=1}^{\infty} \frac{1}{3i^2 - 1}$

(d)  $\sum_{i=1}^{\infty} \frac{6 + 5^i}{4^i}$

(e)  $\sum_{i=0}^{\infty} \frac{1 + 5^i}{1 + 6^i}$

(f)  $\sum_{i=1}^{\infty} \frac{i + 4}{(i + 2)^2}$

(g)  $\sum_{i=1}^{\infty} \frac{1}{\sqrt{i^5 + 1}}$

(h)  $\sum_{i=1}^{\infty} \frac{2^i(4i^3 - 1)}{i^3 + i^2 + 11}$

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