MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.5 **Math 2000 Worksheet** FALL 2018

For practice only. Not to be submitted.

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

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

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

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

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

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

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

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

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

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