SECTION 1.4 **Math 2000 Worksheet** FALL 2018

For practice only. Not to be submitted.

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

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

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

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

   (d) $\displaystyle\sum_{i=2}^{\infty} \frac{\ln(i)}{i^2}$

   (e) $\displaystyle\sum_{i=2}^{\infty} \frac{\ln(i)}{i}$

2. Find the sum of the series $\displaystyle\sum_{i=1}^{\infty} \frac{1}{i^7}$ correct to three decimal places using the remainder estimate for the Integral Test.