SECTION 1.7        **Math 2000 Worksheet**        WINTER 2020

**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) $\displaystyle\sum_{i=0}^{\infty} \frac{3^i}{3+7^i}$

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

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

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

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

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