Math 2B Worksheet: 11.2 Series

Write your names and Student ID numbers at the top of the page

1. Determine whether each series is convergent or divergent. If it is convergent find its sum.

   (a) $\displaystyle\sum_{k=1}^{\infty} \frac{(-3)^{k-1}}{4^k}$

   (b) $\displaystyle\sum_{n=5}^{\infty} \frac{5}{\pi^n}$

   (c) $\displaystyle\frac{1}{3} + \frac{1}{6} + \frac{1}{9} + \frac{1}{12} + \cdots$

   (d) $\displaystyle\sum_{k=1}^{\infty} \arctan k$

2. Determine the convergence/divergence of the series by expressing the partial sums as a telescoping sum.

$$\sum_{n=2}^{\infty} \frac{2}{n^2 - 1}$$

3. Use a geometric series to express $0.\overline{8} = 0.8888\ldots$ as a fraction.