NAME:
Show ALL your work CAREFULLY.

(a) Find the limit of the following sequence or explain why it does not exist.
\[ a_n = n(1 - \cos(1/n)) \]

(b) Determine whether the following infinite series converges or diverges. If it converges, evaluate the infinite series. [Hint: write the first few terms of the series.]
\[ \sum_{n=3}^{\infty} 2 \left( \frac{e}{\pi} \right)^n \]