1. Determine whether the following series converge conditionally, converge absolutely, or diverge. For those that converge, find upper and lower bounds.

   (a) $\displaystyle\sum_{j=1}^{\infty} \frac{(-1)^j}{\sqrt{2j}(j+1)}$

   (b) $\displaystyle\sum_{n=1}^{\infty} (-1)^{n+1} \frac{n^5}{n^6+17}$

   (c) $\displaystyle\sum_{k=1}^{\infty} (-1)^{k+1} \frac{k^2}{k^2-5k}$

   (d) $\displaystyle\sum_{k=1}^{\infty} \frac{\cos(k)}{k^4+1}$

2. Determine whether the following series converge conditionally, converge absolutely, or diverge. For those that converge, approximate each to within 10^{-6}.

   (a) $\displaystyle\sum_{k=1}^{\infty} (-1)^{k+1} \frac{1}{k^2+1}$

   (b) $\displaystyle\sum_{k=2}^{\infty} \frac{7-\sin(k)}{k^2+14k}$