Problem Wk.5.3.10: As close as necessary

Define a procedure \texttt{numTerms(eps)}, which returns the smallest value of \( n \) so that the value of
\[
\pi/4 = \sum_{k=0}^{n-1} \frac{(-1)^k}{2k + 1}
\]
is within \( \text{eps} \) of \( \pi \). Your function should have type \texttt{float \rightarrow positiveInt}. Assume that the procedure \texttt{piSeries} has been defined for you. You can use the constant \texttt{math.pi} for the true value of \( \pi \).

We advocate defining and using a helper procedure \texttt{within(x, y, eps)} that returns \texttt{True} if \( x \) is within \( \text{eps} \) of \( y \). You can assume that the procedure \texttt{between}, which we defined in a previous exercise, is available to you.

It's okay if your procedure is pretty slow; but you might find it interesting to think about how to make it take an amount of time that doesn't grow linearly with the answer.