MA 126 — Fall 2016 — Prof. Clontz — Quiz

Name: _____

Choose D for "None of these"

29. Find $\lim_{n\to\infty} \frac{n!\cos n}{(n+1)!}$.
    A. 1
    B. 0
    C. $\pi/2$

30. Find $\lim_{n\to\infty} \frac{(3+n)^n}{n^n}$.
    A. 1
    B. 0
    C. e^3

31. Which of these statements seems most appropriate for describing the sequence whose initial terms are $\langle \frac{1}{4}, -\frac{1}{6}, \frac{1}{8}, -\frac{1}{10}, \frac{1}{12}, \ldots \rangle$?
    A. The sequence is bounded and monotonic, so it converges by the Monotonic Sequence Theorem.
    B. The sequence is not monotonic and not bounded, so it diverges by the Monotonic Sequence Theorem.
    C. The sequence is bounded, but not monotonic, so the Monotonic Sequence Theorem doesn't apply. However, it does appear to converge to 0 anyway.