Math 10860, Honors Calculus 2

Quiz 10, Thursday April 23

Name:

1. Give a complete statement of the ratio test for series convergence.

2. Determine for which real x does the series $\sum_{n=0}^{\infty}(-1)^n\frac{x^n}{2n+1}$ converge. *Briefly* justify your various assertions.

   Hint: Consider cases, the first of which should be very quick.

   Case 1 $x > 1$ and $x < -1$.

   Case 2 $0 \leq x \leq 1$ (note that the terms alternate in sign in this regime).

   Case 3 $-1 < x < 0$ (note that all terms are *positive* in this and the next regime).

   Case 4 $x = -1$.