

Name: _____

Score: _____

1. Determine whether each of the following statements is true or false, and explain your answers briefly. (2 points each)
 - (a) The sequence $a_n = \sin(\frac{\pi}{n})$ converges.
 - (b) The series $\sum_{n=1}^{\infty} \frac{1}{3n+1}$ converges.
 - (c) The series $\sum_{n=1}^{\infty} \frac{n}{n^3+1}$ converges.
 - (d) The series $\sum_{n=1}^{\infty} \frac{1}{2^n+n}$ converges and equals to 1.
 - (e) If the series $\sum_{n=1}^{\infty} a_n$ converges, then the series $\sum_{n=1}^{\infty} \frac{a_n}{n}$ converges also.
 - (f) * Given a sequence a_n , let $s_n = \frac{a_1+\dots+a_n}{n}$ be the average of the first n terms. If s_n converges then a_n converges.