SEQUENCES AND SERIES, EXAMPLES CLASS 1.

(1) Let the sequence (a_n) be defined by

$$a_n = (n+1)^{1/4} - n^{1/4}.$$

Does (a_n) converge, and if so, to what value? Prove any assertions that you make.

(2) Prove that the sequence (a_n), defined by

$$a_n = \sqrt{n^2 + 2n} - n$$

converges to 1.