MATH 21C

SEC. 10.1 - EXTRA PROBLEMS

USE THE DEFINITION OF THE LIMIT OF A SEQUENCE (GIVEN BELOW AND ON P. 574)

TO PROVE THE FOLLOWING LIMITS:

① $\displaystyle\lim_{n \to \infty} \frac{2}{\sqrt{n}} = 0$

② $\displaystyle\lim_{n \to \infty} \frac{6n-8}{2n-1} = 3$

③ $\displaystyle\lim_{n \to \infty} \frac{n^2-2n}{n^2+4} = 1$

④ $\displaystyle\lim_{n \to \infty} r^n = 0$ IF $|r| < 1$.

DEF (P. 574)

$\underline{\displaystyle\lim_{n \to \infty} a_n = L}$ IFF FOR EVERY $\varepsilon > 0$ THERE IS A POSITIVE INTEGER N SUCH THAT IF $n > N$, THEN $|a_n - L| < \varepsilon$.