

방과후 퀴즈 11.1

1. proof the theorem

If $\lim_{n \rightarrow \infty} |a_n| = L$ and the function f is continuous at L , then $\lim_{n \rightarrow \infty} f(a_n) = f(L)$.

2. Determine whether the sequence converges or diverges. if it converges, find the limit.

$$a_n = \sqrt[n]{n}$$

3. Determine whether the sequence converges or diverges. if it converges, find the limit.

$$a_n = \frac{n \sin n}{n^2 + 1}$$

4. A sequence is defined by the equations $a_1 = 1$, $a_{n+1} = \frac{1}{3}(a_n + 4)$. Show that a_n is increasing and $a_n < 2$ for all n . Deduce that a_n is convergent and find its limit.

5. Determine whether the sequence converges or diverges. If it converges, find the limit.

$$a_n = \frac{(-10)^n}{n!}$$