AUC apCalculus BC

Assignment 05

Learn the proof of the “Grand-Prix” Theorem.

PROBLEM 7.1. *Calculate the following limits by the Transfer Principle. State the relevant function and sequence involved in its such application:*

(1) $\lim_{n\to+\infty} \frac{sin(1/n^2)}{1/n^2}$.

(2) $\lim_{n\to+\infty} \frac{sin(1/n^2)}{1/n^3}$.

(3) $\lim_{n\to+\infty} \frac{n^3}{e^{5n^3}}$.

(4) $\lim_{n\to+\infty} \frac{n^2}{e^{5n^3}}$.

(5) $\lim_{n\to+\infty} \frac{n^{30}}{e^{5n^3}}$.

(6) $\lim_{n\to+\infty} \frac{n^3}{e^{5n^3+3}}$.