

Math 113 – Homework 7

Due: 20 December 2005 Tuesday.

Q-1) $\lim_{x \rightarrow 0} \frac{15 \tan x - 15x - 5x^3 - 2x^5}{24x \cos x - 24x + 12x^3 - x^5} = ?$

Q-2) $\lim_{x \rightarrow 0} \frac{2x^3 \sec x}{2x - x^2 - 2 \ln(1 + x)} = ?$

Q-3) $\lim_{x \rightarrow 0} \frac{(e^{\sin x} - 1) \sin x^3}{x^3 \tanh x} = ?$

Q-4) $\lim_{x \rightarrow 0} \frac{\arctan x}{\sinh x \cos x} = ?$

Q-5) Find $\lim_{x \rightarrow 0} \frac{e^{-1/x^2}}{x^n}$, where n is any integer.

Show in reasonable detail how you solve these problems.

Comments and questions to sertoz@bilkent.edu.tr