MA 16010 Quiz 8

Lesson 21-23

25 March 2022

Problem 1. Find the limit

$$\lim_{x \to \infty} \frac{2 - x^2 + 3x + 5x^3}{4x^3 + 6x - 3x^2 + 7}$$

Problem 2. Find the horizontal and slant asymptotes of the function if they exist.

$$f(x) = \frac{x^3 + 3x + 7}{x^2 - 3}$$

Problem 3. Given the graph of $f'(x)$ below, find the following (a) The critical numbers of $f(x)$, (b) Increasing intervals for $f(x)$ (c) Decreasing intervals for $f(x)$.