MA 158

Instructions: Show all work, with clear logical steps. No work or hard-to-follow work will lose points.

Problem 1. (4 points) Given the following rational function

$$f(x) = \frac{4x + 1}{5x^2 + 55x + 90},$$

find the following. If it does not exist, say so.

(a) The zeros of $f(x)$

(b) Vertical asymptotes

(c) Horizontal asymptotes

(d) Point at which the graph crosses the horizontal asymptote