

4.

It so happens that this function can be simplified as:

$$\begin{aligned} Z(c) &= \frac{-10-19c+15c^2}{2+5c} \\ &= \frac{(3c-5)(5c+2)}{5c+2} \\ &= 3c-5 \end{aligned}$$

To find the vertical asymptote :

There is no vertical asymptote

To find the horizontal asymptote :

First we must compare the degrees of the polynomials.

The numerator contains a 2<sup>nd</sup> degree polynomial while the denominator contains a 1<sup>st</sup> degree polynomial.

Since the polynomial in the numerator is a higher degree than the denominator, there is no horizontal asymptote.

To find the oblique asymptote :

we must divide the numerator by the denominator and so the oblique asymptote  $s=3c-5$

