

5.

It so happens that this function can be simplified as:

$$\begin{aligned} s(m) &= \frac{-4+2m+20m^2}{2+4m} \\ &= \frac{(4m+2)(5m-2)}{4m+2} \\ &= 5m - 2 \end{aligned}$$

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 2nd degree polynomial while the denominator contains a 1st 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 $q=5m-2$

