1.

It so happens that this function can be simplified as:

$$t(v) = \frac{-4-4v+15v^2}{2+5v}$$

$$= \frac{(3v-2)(5v+2)}{5v+2}$$

$$= 3v - 2$$

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^{nd} degree polynomial while the denominator contains a 1^{st} 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 $p = 3v - 2$