4.

It so happens that this function can be simplified as:

$$c(v) = \frac{-15+14v+8v^2}{5+2v}$$

$$= \frac{(2v+5)(4v-3)}{2v+5}$$

$$= 4v - 3$$

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 $f = 4v - 3$