4.

It so happens that this function can be simplified as:

$$m(h) = \frac{-8+h^3}{-2-h+h^2}$$

$$= \frac{(h-2)\left(h^2+2h+4\right)}{(h-2)(h+1)}$$

$$= \frac{h^2+2h+4}{h+1}$$

To find the vertical asymptote :

$h+1=0$

$h=-1$

There is a vertical asymptote at $h=-1$

To find the horizontal asymptote :

First we must compare the degrees of the polynomials.

The numerator contains a 3rd degree polynomial while the denominator contains a 2nd 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 $\frac{-8+h^3}{-2-h+h^2} = \frac{h^2+2h+4}{h+1} = \frac{3}{h+1} + (h+1)$

There is an oblique asymptote at $w=h+1$