4.

It so happens that this function can be simplified as:

$$t(h) = \frac{-125+h^3}{-5-4h+h^2}$$

$$= \frac{(h-5)\left(h^2+5h+25\right)}{(h-5)\ (h+1)}$$

$$= \frac{h^2+5h+25}{h+1}$$

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 3^{rd} degree polynomial while the denominator contains a 2^{nd} 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 $\frac{-125+h^3}{-5-4h+h^2} = \frac{h^2+5h+25}{h+1} = \frac{21}{h+1} + (h + 4)$

There is an oblique asymptote at $b=h + 4$