3.

It so happens that this function can be simplified as:

$$g(h) = \frac{-64+h^3}{-16+h^2}$$

$$= \frac{(h-4)\left(h^2+4h+16\right)}{(h-4)(h+4)}$$

$$= \frac{h^2+4h+16}{h+4}$$

To find the vertical asymptote :

$h+4=0$

$h=-4$

There is a vertical asymptote at $h=-4$

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 $\frac{-64+h^3}{-16+h^2} = \frac{h^2+4h+16}{h+4} = \frac{16}{h+4} + h$

There is an oblique asymptote at $c=h$