1.

It so happens that this function can be simplified as:

$$v(g) = \frac{-1+g^3}{-2+g+g^2}$$

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

$$= \frac{g^2+g+1}{g+2}$$

To find the vertical asymptote :

$g+2=0$

$g=-2$

There is a vertical asymptote at $g=-2$

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 $\frac{-1+g^3}{-2+g+g^2} = \frac{g^2+g+1}{g+2} = \frac{3}{g+2} + (g-1)$

There is an oblique asymptote at $r=g-1$