2.

It so happens that this function can be simplified as:

$$s(d) = \frac{-125+d^3}{-20-d+d^2}$$

$$= \frac{(d-5)\left(d^2+5d+25\right)}{(d-5)(d+4)}$$

$$= \frac{d^2+5d+25}{d+4}$$

To find the vertical asymptote :

$d+4=0$

$d=-4$

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

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 $\frac{-125+d^3}{-20-d+d^2} = \frac{d^2+5d+25}{d+4} = \frac{21}{d+4} + (d+1)$

There is an oblique asymptote at $j=d+1$