4.

It so happens that this function can be simplified as:

$$s(b) = \frac{-27+b^3}{-15+2b+b^2}$$

$$= \frac{(b-3)\left(b^2+3b+9\right)}{(b-3)(b+5)}$$

$$= \frac{b^2+3b+9}{b+5}$$

To find the vertical asymptote :

$b+5=0$

$b=-5$

There is a vertical asymptote at $b=-5$

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 $\frac{-27+b^3}{-15+2b+b^2} = \frac{b^2+3b+9}{b+5} = \frac{19}{b+5} + (b-2)$

There is an oblique asymptote at $z=b-2$