3.

It so happens that this function can be simplified as:

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

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

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

To find the vertical asymptote :

$e+1=0$

$e=-1$

There is a vertical asymptote at $e=-1$

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

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