

2.

To find the vertical asymptote :

We must set the denominator equal to 0 and solve:

$$n^4 - 1 = 0$$

$$(n^2 - 1)(n^2 + 1) = 0$$

$$(n^2 - 1) = 0$$

$$(n - 1)(n + 1) = 0$$

$$n = 1 \text{ or } n = -1$$

There is vertical asymptote at  $n = 1$  and at  $n = -1$

To find the horizontal asymptote :

First we must compare the degrees of the polynomials.

The numerator contains a 3<sup>rd</sup> degree polynomial while the denominator contains a 4<sup>th</sup> degree polynomial.

Since the polynomial in the numerator is a lower degree than the denominator, the horizontal asymptote is located at  $g = 0$ .

To find the oblique asymptote :

Since the degrees of the numerator are less than the degrees of the denominator, this rational does not have an oblique asymptote

