

To find vertical asymptotes of a rational function

- 1)
- 2)

USE THE TABLE FEATURE TO VERIFY
(There should be an "ERROR" as the y-value)

Ex) Find the vertical asymptotes of

$$f(x) = \frac{x^2 - 3x - 4}{x^2 - 4}$$

YOUR WORK

Pic of YOUR GRAPH



pic of YOUR TABLE



Finding horizontal asymptotes

RATIONAL FUNCTIONS CAN ALSO SOMETIMES HAVE HORIZONTAL ASYMPTOTES.

To find horizontal asymptotes

- 1) Call the _____ of the numerator n.
- 2) Call the _____ of the denominator d.

Compare n and d.

Case 1

a) If $n < d$, _____

Ex)
$$h(x) = \frac{3x}{x^2 - 5x - 6}$$

YOUR WORK

Pic of YOUR GRAPH



Finding horizontal asymptotes

Case # 2

b) If $n = d$, the _____

$y =$ _____

is the equation of the horizontal asymptote.

Ex)
$$F(x) = \frac{6x - 12}{2x + 5}$$

YOUR WORK

Pic of YOUR GRAPH



Finding horizontal asymptotes:

Case # 3

C) If $n > d$, _____

Ex)
$$g(x) = \frac{x^2 - 1}{2x + 4}$$

YOUR WORK

Pic of YOUR GRAPH

