

Horizontal asymptotes of rational functions

Rational functions are of the form:

$$f(x) = \frac{ax^n + bx^{n-1} + \dots}{cx^m + dx^{m-1} + \dots}$$

To get the horizontal asymptotes, you first take the **dominant term** It's the leading term of the polynomial in the denominator, *without the coefficient*. Here x^m .

Then, you divide every term in both numerator and denominator, and evaluate at $x \rightarrow \infty$.

Radical functions

Domain

All the values where the radicand > 0 for even degrees, $(-\infty, \infty)$ for odd degrees.

Exercises

1. Domain of $d(x) = \sqrt[7]{-2x + \frac{1}{2}} + 1$?

$$-2x + \frac{1}{2} >$$