



Rational Functions and Asymptotes - Functions of Degree Top and Bottom to X

Asymptote Types

1 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

$$f(x) = \frac{(x + 4)(x - 1)(x - 3)}{(x + 2)}$$

- A Horizontal asymptote (not at zero) B Slant asymptote
 C Horizontal asymptote (at zero) D No horizontal or slant asymptote

2 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

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

- A Horizontal asymptote (at zero) B Slant asymptote
 C No horizontal or slant asymptote D Horizontal asymptote (not at zero)

3 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

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

- A No horizontal or slant asymptote B Horizontal asymptote (at zero)
 C Slant asymptote D Horizontal asymptote (not at zero)

4 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

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

- A Horizontal asymptote (at zero) B Slant asymptote
 C Horizontal asymptote (not at zero) D No horizontal or slant asymptote

5 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

$$f(x) = \frac{2(x + 4)(x - 1)}{(x - 2)(x - 3)(x - 4)}$$

- A Horizontal asymptote (at zero) B Horizontal asymptote (not at zero)
 C No horizontal or slant asymptote D Slant asymptote

6 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

$$f(x) = \frac{(x + 4)(x + 2)(x - 3)}{(x + 1)}$$

- A Slant asymptote B Horizontal asymptote (not at zero)
 C Horizontal asymptote (at zero) D No horizontal or slant asymptote

7 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

$$f(x) = \frac{(x + 3)(x - 1)(x - 3)}{(x + 2)}$$

- A Slant asymptote B No horizontal or slant asymptote
 C Horizontal asymptote (not at zero) D Horizontal asymptote (at zero)

8 Based on the order of polynomials in the numerator and denominator, what type of horizontal or slant asymptotes would this expression have?

$$f(x) = \frac{3(x + 1)(x - 3)}{(x - 1)}$$

- A Slant asymptote B No horizontal or slant asymptote
 C Horizontal asymptote (not at zero) D Horizontal asymptote (at zero)