ASYMPTOTES (Calculus)

VERTICAL

Set the denominator equal to "0".

HORIZONTAL

If the degree of the numerator is larger than the degree of the denominator, there will be NO horizontal asymptote.

To find the horizontal asymptote:

1. Divide the numerator and denominator by the greatest power of x that appears in the fraction.
2. Take the limit of each factor as x approaches infinity.

SLANT

When the degree of the numerator is exactly one greater than the degree of the denominator, there will be a slant asymptote.

To find the slant asymptote:

1. Multiply the numerator and denominator out, if necessary.
2. Divide the numerator by the denominator.
3. Take the limit of the remainder as x approaches infinity (in other words, ignore the remainder).
4. The resulting equation is the slant asymptote.