Precalculus

2-07 Asymptotes of Rational Functions

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Rational Function

- _____
- $f(x) = \frac{2x+1}{3x-4}$
- Domain: Denominator _____
- Asymptotes describe behavior of the graph at the _____
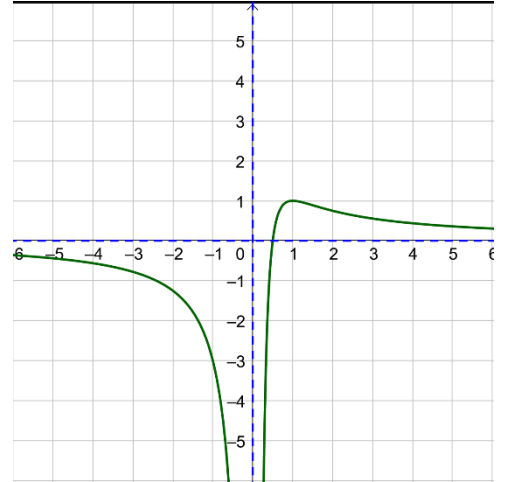
Vertical Asymptotes

- _____and _____
- Set _____= 0 and solve for x

Horizontal Asymptotes

- Plug in _____number for x and _____

OR

- Find degree of _____(N) and _____(D)
- If N < D, _____
- If N = D, _____
- If N > D, _____

Find the asymptotes of $f(x) = \frac{5x^2}{x^2-1}$

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

Find the domain

Find the removable discontinuity

Find the asymptotes

Slant Asymptote

- If $N = D + 1$, _____and _____remainder

Find the asymptotes of $f(x) = \frac{3x^2+1}{x}$