



# Rational Functions

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*A fraction of polynomials* is a **rational function**

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**Graphing them takes some careful attention!**

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Follow my steps...

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# Holloman's Method

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- Factor!
  - Identify domain issues
  - Identify axis intercepts
  - Identify End Behavior
  - Graph!
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# Holes

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"Removable Discontinuity"

**Caused by a common factor between the numerator and denominator ("zero over zero")**

Literally a hole in the graph (very small)

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# Vertical Asymptotes

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"Non-removable discontinuity"

**Caused by a zero in the denominator only**

(non zero over zero)

Because this is a domain issue, vertical asymptotes cannot be crossed

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# End Behavior

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**Determined by the quotient when the rational function is divided**

This may be any function...a line, a parabola...

This "end behavior model" only matters at the ENDS of the graph...thus, a function MAY cross an end behavior asymptote

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