

Graphing – Rational Functions

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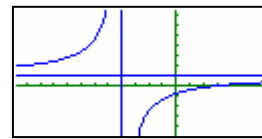
Select GRAPH mode from the main menu by using the arrow keys to highlight the GRAPH icon or pressing 5.



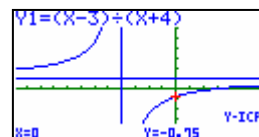
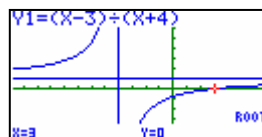
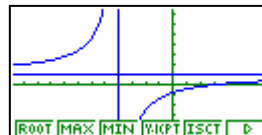
Example: Draw $y = \frac{(x - 3)}{(x + 4)}$

Answer: As $x \rightarrow -\infty$, $y \rightarrow x/x \rightarrow 1$.
 As $x \rightarrow +\infty$, $y \rightarrow 1$, therefore $y = 1$ is a horizontal asymptote.
 As $x \rightarrow -4$, $y \rightarrow \infty$, therefore $x = -4$ is a vertical asymptote.

Enter these functions into the **Y1**, **Y2** and **X3** spaces, the vertical lines $x = c$ **Y1** etc can be changed to **X1** etc via **TYPE**, press **F3**.



The x and y intercepts can be calculated in **G-Solv**, pressing **SHIFT F5**, then **F1** for **ROOT** [x intercept], **F4** [y-intercept].



[N.B. Asymptotes can also be calculated in **TABLE** mode from the **MAIN MENU**. See another worksheet on 'Making Tables'.]