

31 (a) $x^2 - 4 = 0 \Rightarrow x = \pm 2$; $D = \{x \mid x \neq \pm 2\}$

(b) The graph of f using dot mode is shown in *Figure 31a*.

(c) Since the degree of the denominator (2) is greater than the degree of the numerator (1), there is a horizontal asymptote of $y = 0$. There are vertical asymptotes at $x = \pm 2$.

$[-8, 8, 1]$ by $[-8, 8, 1]$

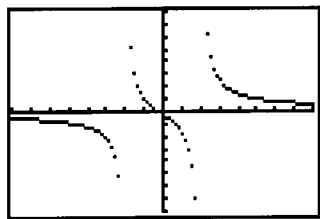


Figure 31a

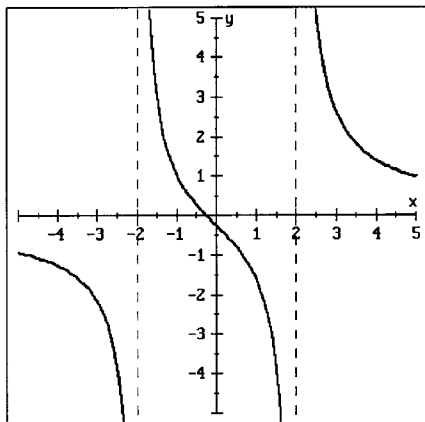


Figure 31b

(d) First, sketch in the vertical asymptotes $x = \pm 2$. The x -axis represents the horizontal asymptote. Then, use *Figure 31a* as a guide for to more complete graph of f as in *Figure 31b*.