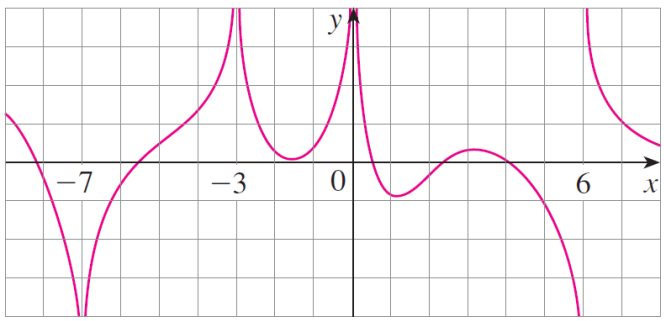
Exercise 9

For the function f whose graph is shown, state the following.

(a) $\lim_{x \to -7} f(x)$ (b) $\lim_{x \to -3} f(x)$ (c) $\lim_{x \to 0} f(x)$

(d) $\lim_{x \to 6^-} f(x)$ (e) $\lim_{x \to 6^+} f(x)$

(g) The equations of the vertical asymptotes.



Solution

$$\lim_{x \to -7} f(x) = -\infty$$

$$\lim_{x \to -3} f(x) = +\infty$$

$$\lim_{x \to 0} f(x) = +\infty$$

$$\lim_{x \to 6^-} f(x) = -\infty$$

$$\lim_{x \to 6^+} f(x) = +\infty$$

Vertical Asymptotes: $x = -7$ and $x = -3$ and $x = 0$ and $x = 6$.