

Infinite Limits-HW Problems

1. Find the following limits:

a. $\lim_{x \rightarrow 3^+} \frac{x-1}{x-3}$

b. $\lim_{x \rightarrow 3} \frac{1}{(x-3)^2}$

c. $\lim_{x \rightarrow 2^-} \frac{x+2}{x^2-4}$

d. $\lim_{x \rightarrow 1^-} \frac{1-x}{x^2-2x+1}$

e. $\lim_{x \rightarrow 3^+} \frac{x^2-4}{x^2+5x+6}$

f. $\lim_{x \rightarrow -1^+} \frac{x^2-1}{x+1}$

g. $\lim_{x \rightarrow -3^-} \frac{x}{x^2-9}$

2. Find the vertical asymptotes if they exist.

a. $f(x) = \frac{1}{x^2-9}$

b. $g(x) = \frac{x^2-x}{x^3-x^2}$

c. $h(x) = \frac{x^2-x-6}{x^2-4x+3}$