Calculus 12
9-2 Vertical Asymptotes

1. Find each limit.

a) $\lim_{x \to 8} \frac{1}{(x-8)^2}$

b) $\lim_{x \to -1} \frac{-2}{(x+1)^2}$

c) $\lim_{x \to 2^+} \frac{x-4}{x-2}$

d) $\lim_{x \to 2^-} \frac{x-4}{x-2}$

e) $\lim_{x \to -4} \left[1 + \frac{2x}{(x+4)^6}\right]$

f) $\lim_{x \to -3^+} \frac{10}{x^2 - x - 12}$

2. Find the vertical asymptotes and sketch the graph near the asymptotes.

a) $y = \frac{2}{x+1}$

b) $y = \frac{3}{(x-6)^2}$

c) $y = \frac{1}{x^2 - 1}$

d) $y = \frac{6x^3}{x^2 + 4x + 3}$

e) $y = \frac{x}{x^2 - 1}$

f) $y = \frac{1}{x^2(x+1)}$