Unit 2: Limits and Continuity ***Calculus 3208***

Worksheet 4: Infinite Limits (Lesson 2.7)

1. Evaluate the following limits.

a) $\lim\limits_{x\to -3^+} \dfrac{x+2}{x+3}$

b) $\lim\limits_{x\to 2^-} \dfrac{x^2-2x}{x^2-4x+4}$

(c) $\lim\limits_{x\to 0}\left(\dfrac{1}{x}-\dfrac{1}{|x|}\right)$

2. Using limits, determine the equation of the vertical asymptote of the function $f(x) = \frac{x}{x-1}$.

3. Determine all the vertical asymptotes, if any, of the function $f(x) = \frac{30x^2 - 5x^4 - 5x^3}{x^4 - 4x^3 + 4x^2}$

For each vertical asymptote, assign $\pm\infty$ to the left hand and right hand limits.