Section 2.2: Additional Problems

1. Find the vertical asymptote(s) for the function: $y = \dfrac{x+3}{x^2-9}$. Justify that your answer is correct.

2. Evaluate these limits.

   (a) $\lim\limits_{x\to 5^+} \dfrac{1}{x-5} =$

   (b) $\lim\limits_{x\to 5^-} \dfrac{1}{x-5} =$

   (c) $\lim\limits_{x\to 5} \dfrac{1}{x-5} =$

   (d) $\lim\limits_{x\to 0} \dfrac{x-5}{x^2} =$

   (e) $\lim\limits_{x\to 4^+} \dfrac{2-x}{4-x} =$

   (f) $\lim\limits_{x\to 4^-} \dfrac{2-x}{4-x} =$

   (g) $\lim\limits_{x\to 3^+} \dfrac{x-2}{x^2-9} =$

   (h) $\lim\limits_{x\to 3^-} \dfrac{x-2}{x^2-9} =$

   (i) $\lim\limits_{x\to 3^+} \dfrac{x-4}{x^2-9} =$

   (j) $\lim\limits_{x\to 3^-} \dfrac{x-4}{x^2-9} =$