WORKSHEET: SECTION 2.2

1. Determine the infinite limit. Explain your reasoning.

   (a) $\displaystyle\lim_{x\to 3^-}\frac{\sqrt{x}}{x-3}$

   (b) $\displaystyle\lim_{x\to 3^+}\frac{\sqrt{x}}{x-3}$

   (c) $\displaystyle\lim_{x\to 3^+}\frac{2-10x}{x-3}$

   (d) $\displaystyle\lim_{x\to 3^+}\ln(x-3)$

   (e) Why didn't we ask you to find $\displaystyle\lim_{x\to 3^-}\ln(x-3)$?

2. Let $f(x)=8-x^2$ have domain $(-\infty,1)\cup(1,\infty)$. Sketch $f(x)$ and explain why $f(x)$ has a limit as x approaches 1 even though $f(x)$ is undefined at $x=1$.