A. Evaluate the following limits graphically or numerically.

    1) $\lim_{x\to3}\frac{1}{x-3}$

    2) $\lim_{x\to3}\frac{\frac{1}{x+1}-\frac{1}{4}}{x-3}$

    3) $\lim_{x\to-2}|x-2|$

B. Evaluate the following limits graphically, and then find the domain.

    1) $\lim_{x\to4}\frac{\sqrt{x+5}-3}{x-4}$

    2) $\lim_{x\to9}\frac{x-9}{\sqrt{x}-3}$

C. Determine whether the statement is true or false. If it is false, explain why or give an example that shows it as false.

    1) If f is undefined at $x=c$, then the limit of $f(x)$ as x approaches c does not exist.

    2) If the limit of $f(x)$ as x approaches c is 0, then there must exist a number k such that $f(k) <$ *0.0001*.

    3) If $f(c)=L$, then $\lim_{x\to c} f(x)=L$.

    4) If $\lim_{x\to c} f(x)=L$, the $f(c)=L$.

D. Consider the function $f(x)=(1+x)^{1/x}$. Estimate the limit $\lim_{x\to0}(1+x)^{1/x}$ by evaluating f at x-values near 0. Sketch the graph of f.