(1) Consider the function $f(x) = \begin{cases} \sqrt{1-x^2} & 0 \leq x < 1 \\ 1 & 1 \leq x < 2 \\ 2 & x = 2. \end{cases}$

(a) Sketch the graph of the function $f$. (b) What are the domain and range of $f$?

(c) At what points does only the left-hand limit exist?

(d) At what points does only the right-hand limit exist?

(e) At what points "a", if any, does $\lim_{x \to a} f(x)$ exist?

(2) Find $\lim_{x \to 2\pi} x \csc(x)$

(3) Evaluate $\lim_{x \to 2} \frac{\sqrt{(6-x)} - 2}{\sqrt{(3-x)} - 1}$.

(4) Sketch the graph of $f(x) = x - \lfloor x \rfloor$, $-2 \leq x < 1$. 