1. (7 Points)

The graph of $f(x)$ is shown at the left.

a.
List the conditions required for continuity at a point.

1. $\lim_{x \to a} f(x)$ exists
2. $f(a)$ exists
3. $\lim_{x \to a} f(x) = f(a)$

b.
Show that $f(x)$ satisfies all three conditions or explain which condition is not satisfied.

$\lim_{x \to a} f(x)$ DNE because $\lim_{x \to a^-} f(x) = 4$ and $\lim_{x \to a^+} f(x) = 3$, and thus $\lim_{x \to a^-} f(x) \neq \lim_{x \to a^+} f(x)$. 