QUIZ #3

1. State the formal definition: \( \lim_{x \to 2} 3x + 5 = 11 \)

2. Prove the following: \( \lim_{x \to 2} 3x + 5 = 11 \) (use the LSITT method)

3. Draw a graph below with all of the following characteristics:

\[
\begin{align*}
\lim_{x \to 3^-} f(x) &= \infty \\
\lim_{x \to 3^+} f(x) &= -\infty \\
\lim_{x \to \infty} f(x) &= 2 \\
\lim_{x \to -\infty} f(x) &= -3
\end{align*}
\]

AND a jump discontinuity at \( x = 2 \) and a removable discontinuity at \( x = -3 \)

4. Find the exact slope of the graph of \( f(x) = \sqrt{x} \) at \( x = 4 \). Use the h-method and show all work.