1. Evaluate \( \lim_{x \to 2^+} f(x) \) and \( \lim_{x \to 2^-} f(x) \) for the function

\[
f(x) = \frac{x^2 - x - 2}{|x^2 - 2x|}
\]

Is this function continuous at \( x = 2 \)? If not what type of discontinuity does \( f(x) \) have? (removable or non removable)

2. Find the limit.

\[
\lim_{x \to 0} \frac{1 - \cos(x)}{\sec(x) - 1}
\]

hint: Use the definition of \( \sec(x) = \frac{1}{\cos(x)} \) and simplify!
3. Find all vertical and horizontal asymptotes of the following function.

\[ f(x) = \frac{3x^2 - 7x - 1}{x^2 - 6x - 16} \]