Problem 1. Find the $\lim_{x \to -\infty} \sqrt{16x^2 + x} - 4x$.

Problem 2. Consider the function $f(x) = \ln(b + \sin x)$. Determine of the function is continuous for the following values of b, and if it is discontinuous determine where it fails continuity.

(a) $b = 0$

(b) $b = 1$

(c) $b = 2$

Problem 3. Find the $\lim_{x \to 0} \frac{\sin(x)}{x}$.