

Name:

Student ID:

Q1) Evaluate the limit, if it exists.

$$a) \lim_{x \rightarrow -2^+} \frac{\sin(x+1)}{x^2 + 2x}$$

$$b) \lim_{x \rightarrow 0} \frac{\sqrt{1+x} - \sqrt{1-x}}{x}$$

Q2) Use the  $\varepsilon - \delta$  definition to prove that

$$\lim_{x \rightarrow -1} 3 - 2x = 5$$