Problem of the Week-6

Determine whether the following limits exist. If they do, find the values. Show your work and carefully justify your answer (justification is more important than answer itself)[1]

$$1) \quad \lim_{x \to 0} \frac{\sqrt{|x|}}{|\sqrt{x+1} - 1|}$$

$$2) \quad \lim_{x \to 0} \frac{|x|}{|\sqrt{x+1} - 1|}$$