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Let $a_n = \sqrt{n+1} - \sqrt{n}$. Prove that $a_n \rightarrow 0$.

Proof:

$$a_n = \frac{(\sqrt{n+1} - \sqrt{n})(\sqrt{n+1} + \sqrt{n})}{\sqrt{n+1} + \sqrt{n}} =$$
$$\frac{n+1-n}{\sqrt{n+1} + \sqrt{n}} = \frac{1}{\sqrt{n+1} + \sqrt{n}} \rightarrow 0$$