

3. $a_n = \sqrt{n+1} - \sqrt{n}$. Найти $\lim a_n$

$$a_n = \sqrt{n+1} - \sqrt{n} = (\sqrt{n+1} - \sqrt{n})(\sqrt{n+1} + \sqrt{n}) / (\sqrt{n+1} + \sqrt{n}) =$$
$$= (n+1 - n) / (\sqrt{n+1} + \sqrt{n}) = 1 / (\sqrt{n+1} + \sqrt{n})$$

$$\lim_{n \rightarrow \infty} (1 / (\sqrt{n+1} + \sqrt{n})) = 0$$