Предел числовой последовательности

$\cancel{\lim\limits_{n\to\infty}\frac{n}{n+1}=1}$ $\lim\limits_{n\to\infty}\frac{n^2+3n-5}{3n^2-n+6}=\left[\frac{\infty}{\infty}\right]=$

$$=\frac{\frac{n^2}{n^2}+\underbrace{\frac{3n}{n^2}}_{\to 0}-\underbrace{\frac{5}{n^2}}_{\to 0}}{\frac{3n^2}{n^2}-\underbrace{\frac{n}{n^2}}_{\to 0}+\underbrace{\frac{6}{n^2}}_{\to 0}}=\frac{1}{3}$$

$$\lim_{n\to\infty}\frac{\sqrt{n}\sin n}{2n+6}=\frac{\frac{\sqrt{n}}{n}\cdot\sin n}{\frac{2n}{n}+\frac{6}{n}}=\frac{0}{2}=0$$

$$\lim_{n\to\infty}(\sqrt{n+1}-\sqrt{n})=\frac{(\sqrt{n+1}-\sqrt{n})(\sqrt{n+1}+\sqrt{n})}{\sqrt{n+1}+\sqrt{n}}=$$

$$=\frac{n+1-n}{\underbrace{\sqrt{n+1}}_{\infty}+\underbrace{\sqrt{n}}_{\infty}}=\frac{1}{\infty}=0$$