

3)  $\int_1^{\infty} \frac{dx}{(1+x)\sqrt{x}}$  - несобств. интеграл

$\lim_{b \rightarrow \infty} \int_1^b \frac{dx}{(1+x)\sqrt{x}} = \left/ \begin{array}{l} \text{сделаем замену} \\ \sqrt{x} = t, x = t^2, \\ dx = 2t dt \end{array} \right/ =$

x	1	b
t	1	b

$= \lim_{b \rightarrow \infty} \int_1^b \frac{2t dt}{(1+t^2)t} = \lim_{b \rightarrow \infty} 2 \int_1^b \frac{dt}{1+t^2} =$

$= \lim_{b \rightarrow \infty} (2 \operatorname{arctg} t \Big|_1^b) =$

$= \lim_{b \rightarrow \infty} (2(\operatorname{arctg} b - \operatorname{arctg} 1)) = 2\left(\frac{\pi}{2} - \frac{\pi}{4}\right) =$

$= \frac{\pi}{2} = 1,571. \text{ окончена}$