

Докажите неравенство:

$$\frac{1}{1 \times 2} + \frac{1}{2 \times 3} + \frac{1}{3 \times 4} + \dots + \frac{1}{99 \times 100} < 1$$

$$1/(1 \cdot 2) = 1/1 - 1/2$$

$$1/(2 \cdot 3) = 1/2 - 1/3$$

$$1/((n-1) \cdot n) = 1/(n-1) - 1/n = n/(n^2-n) - (n-1)/(n^2-n) = (n-n+1)/(n^2-n) = 1/(n^2-n)$$

$$1/1 - 1/2 + \dots - 1/100 = 1/1 - 1/100 < 1$$

