

Бажитина Анастасия.

$$\begin{aligned} 2). & (1 - \frac{1}{4})(1 - \frac{1}{9})(1 - \frac{1}{16})(1 - \frac{1}{25}) \dots (1 - \frac{1}{225}) = \\ & = \frac{\overset{2}{\cancel{3}} \cdot \overset{2}{\cancel{8}} \cdot \overset{5}{\cancel{15}} \cdot \overset{3}{\cancel{24}} \cdot 35 \cdot 48 \cdot 63 \cdot \overset{4}{\cancel{80}} \cdot \overset{9}{\cancel{99}} \cdot \overset{12}{\cancel{120}}}{\underset{1}{\cancel{4}} \cdot \underset{3}{\cancel{9}} \cdot \underset{8}{\cancel{16}} \cdot \underset{5}{\cancel{25}} \cdot 36 \cdot 49 \cdot 64 \cdot \underset{1}{\cancel{81}} \cdot \underset{100}{\cancel{100}} \cdot \underset{121}{\cancel{121}}} \\ & \frac{143 \cdot 168 \cdot 195 \cdot 224}{144 \cdot 169 \cdot 196 \cdot 225} = \frac{8}{15} \text{ (все сокращается)}. \end{aligned}$$

$$\begin{aligned} 7). & \frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \dots + \frac{1}{\sqrt{100}+\sqrt{99}} = (\sqrt{2}-1) + \\ & + (\sqrt{3}-\sqrt{2}) + (\sqrt{100}-\sqrt{99}) = \cancel{\sqrt{2}} - 1 + \cancel{\sqrt{3}} - \cancel{\sqrt{2}} + \\ & + \sqrt{100} - \sqrt{99} = -1 + 10 = 9. \end{aligned}$$