



$$S = \sqrt{p(p-a)(p-b)(p-c)} \quad \text{Формула Герона}$$

$$p = \frac{a+b+c}{2}$$

$$p = \frac{3+4+\sqrt{13}}{2} = \frac{7+\sqrt{13}}{2}$$

$$\begin{aligned} S &= \sqrt{\frac{7+\sqrt{13}}{2} \left(\frac{7+\sqrt{13}}{2} - 3 \right) \left(\frac{7+\sqrt{13}}{2} - 4 \right) \left(\frac{7+\sqrt{13}}{2} - \sqrt{13} \right)} \\ &= \sqrt{\frac{7+\sqrt{13}}{2} \left(\frac{7-6+\sqrt{13}}{2} \right) \left(\frac{7+\sqrt{13}-8}{2} \right) \left(\frac{7+\sqrt{13}-2\sqrt{13}}{2} \right)} \\ &= \sqrt{\frac{(7+\sqrt{13}) \cdot (1+\sqrt{13}) \cdot (-1+\sqrt{13}) \cdot (7-\sqrt{13})}{16}} = \sqrt{\frac{(7^2 - (\sqrt{13})^2) ((\sqrt{13})^2 - 1^2)}{16}} = \frac{(49-13)(13-1)}{16} \\ &= \sqrt{\frac{36 \cdot 12}{16}} = \sqrt{\frac{3 \cdot 1 \cdot 6 \cdot 2 \cdot \sqrt{3}}{4}} = 3\sqrt{3} \end{aligned}$$