Решение треугольников.

9 класс.

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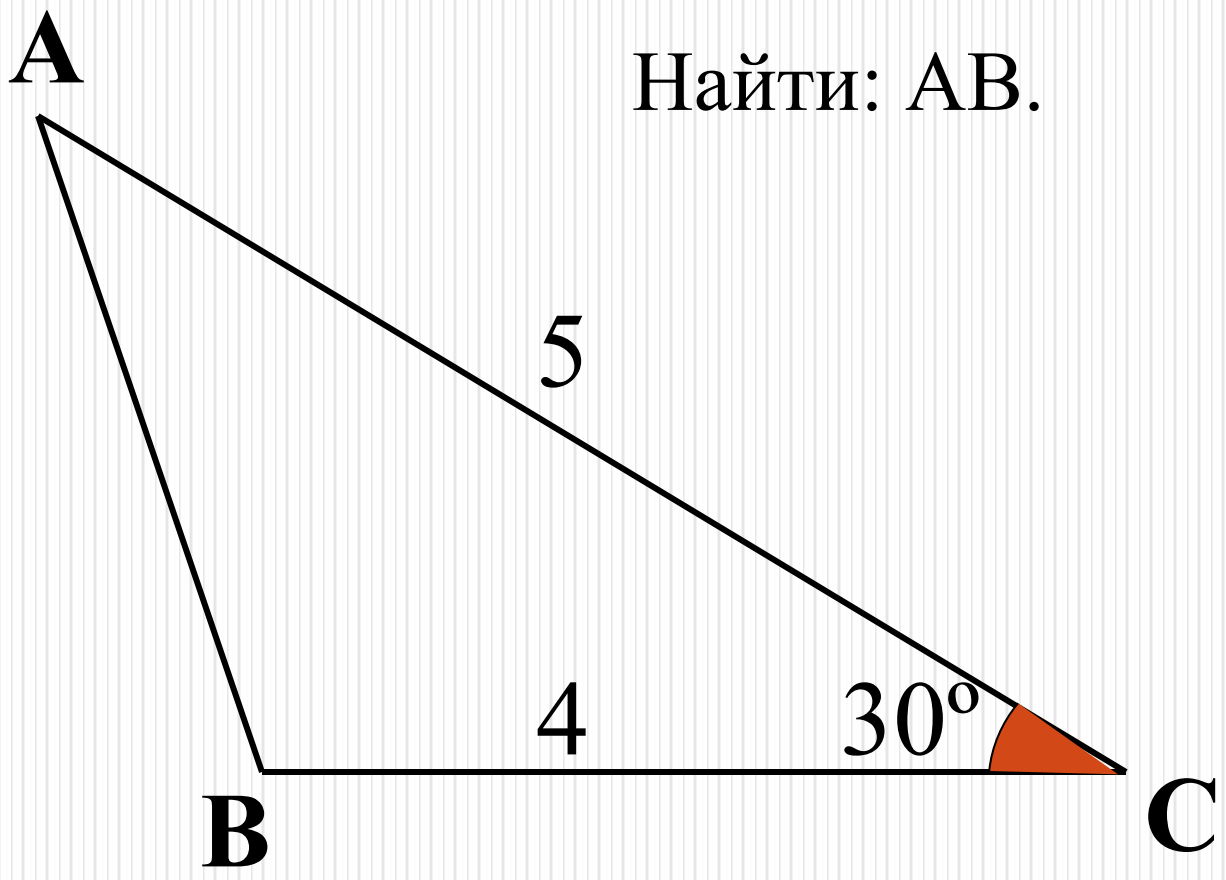
1.

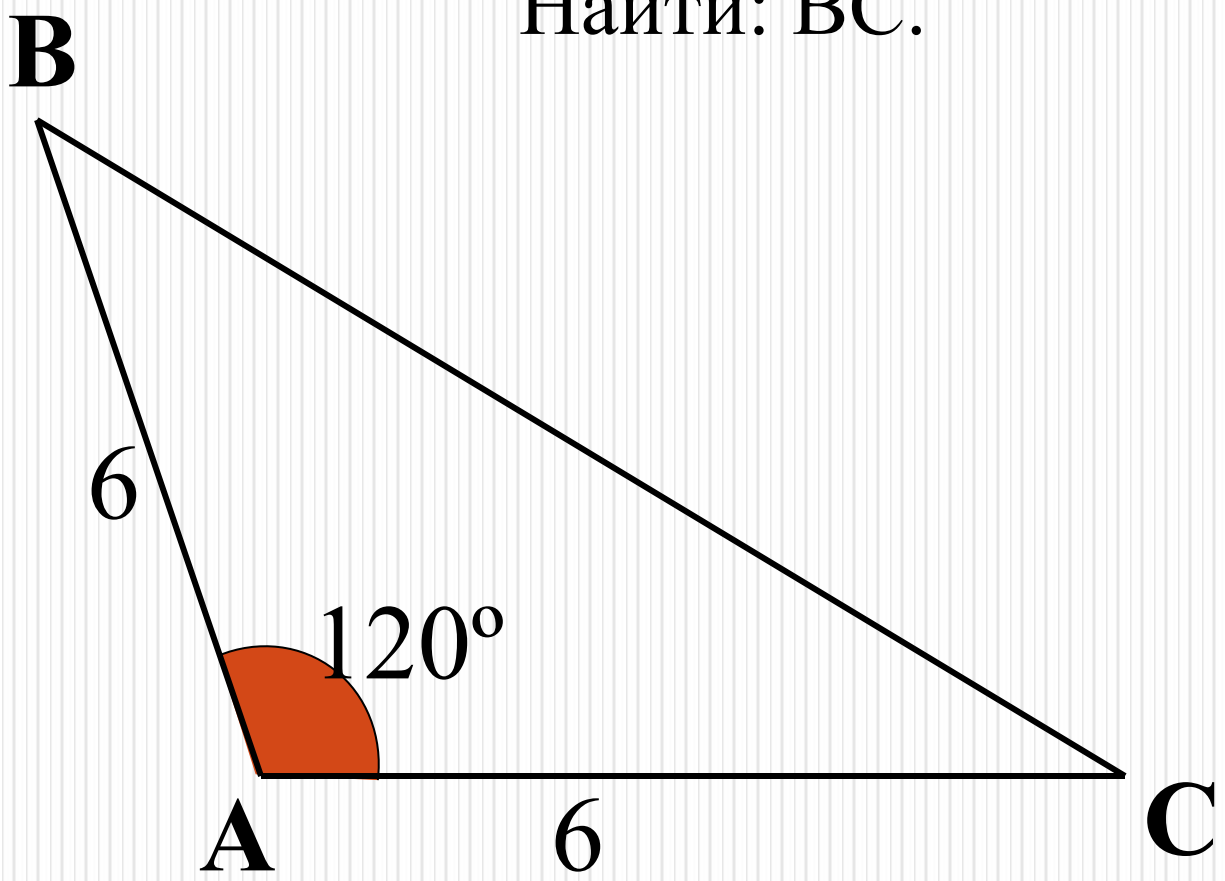
Математический диктант:



Найти: АВ.

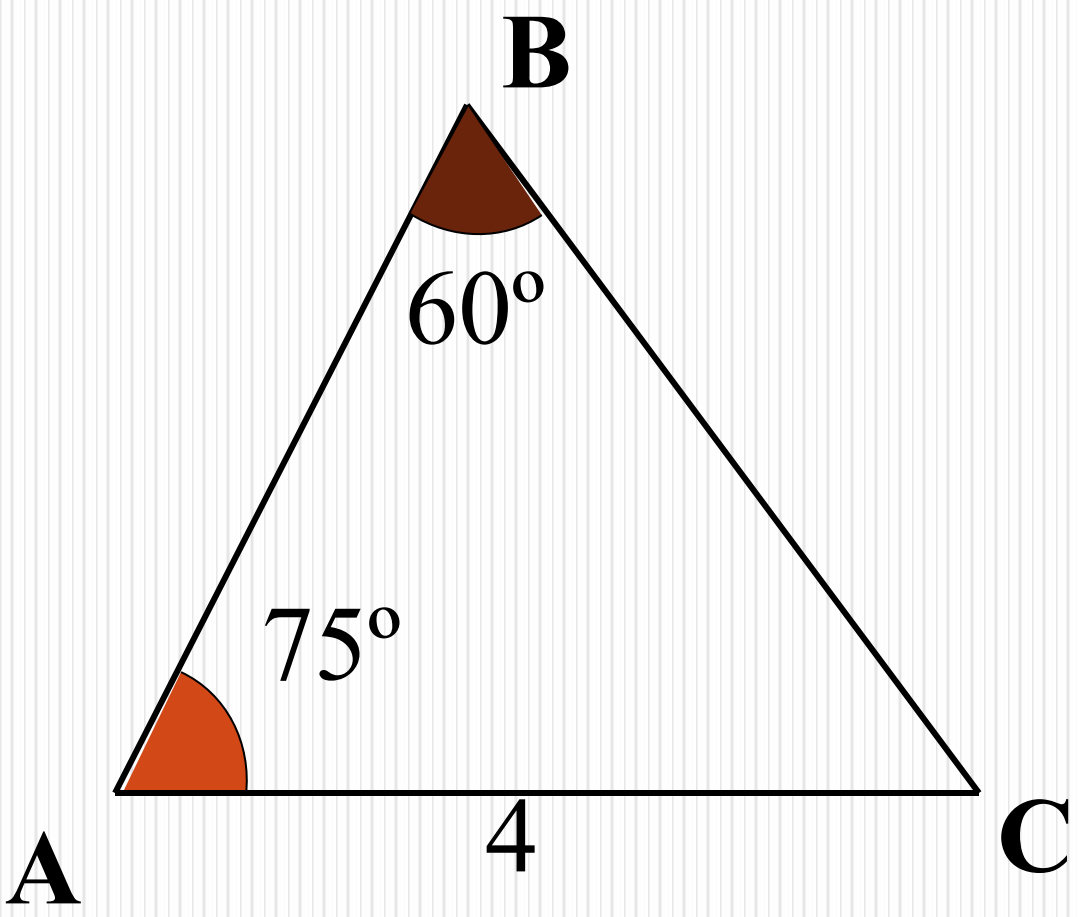
2.

Найти: BC.



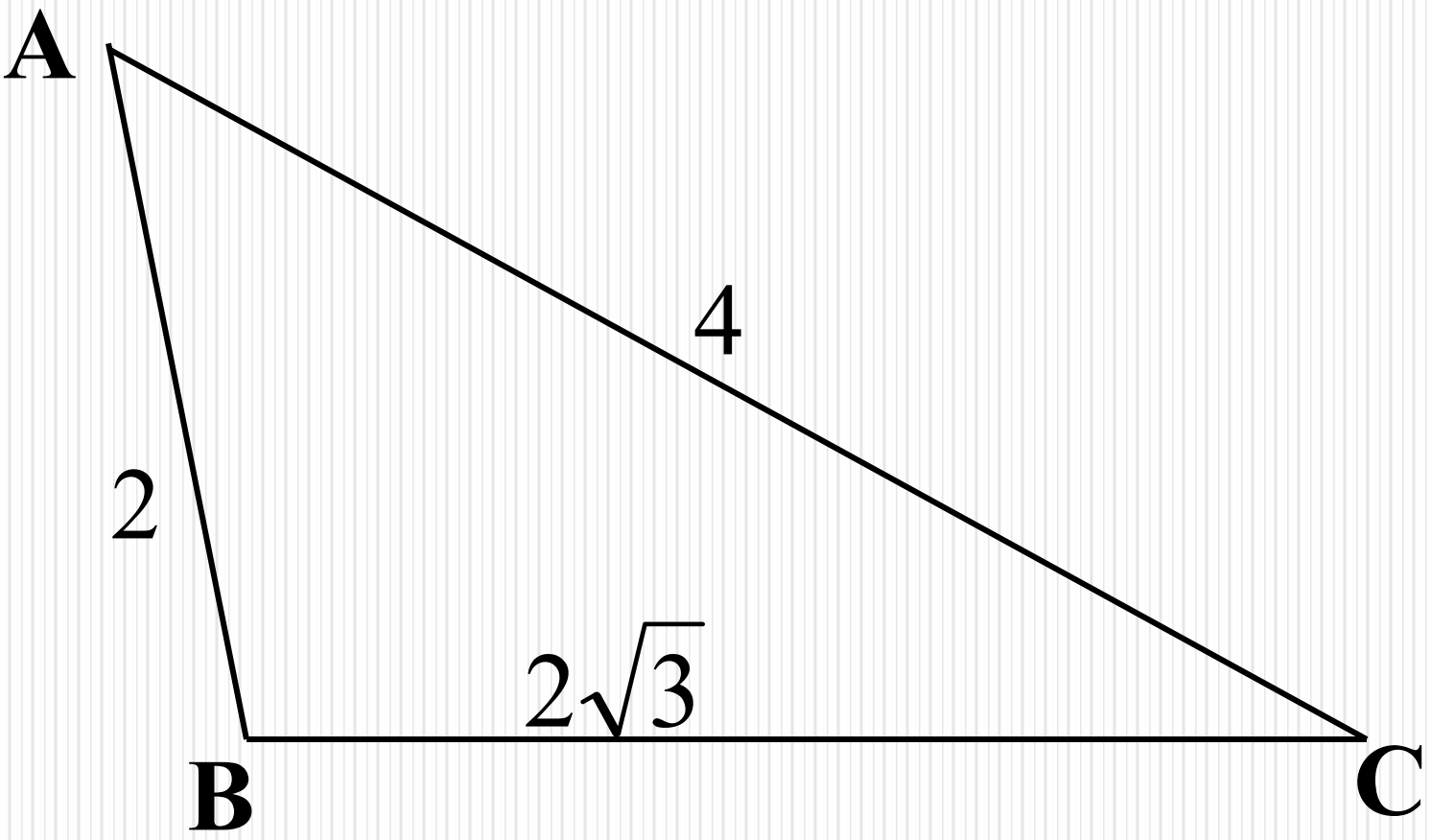
3.

Найти: AB.

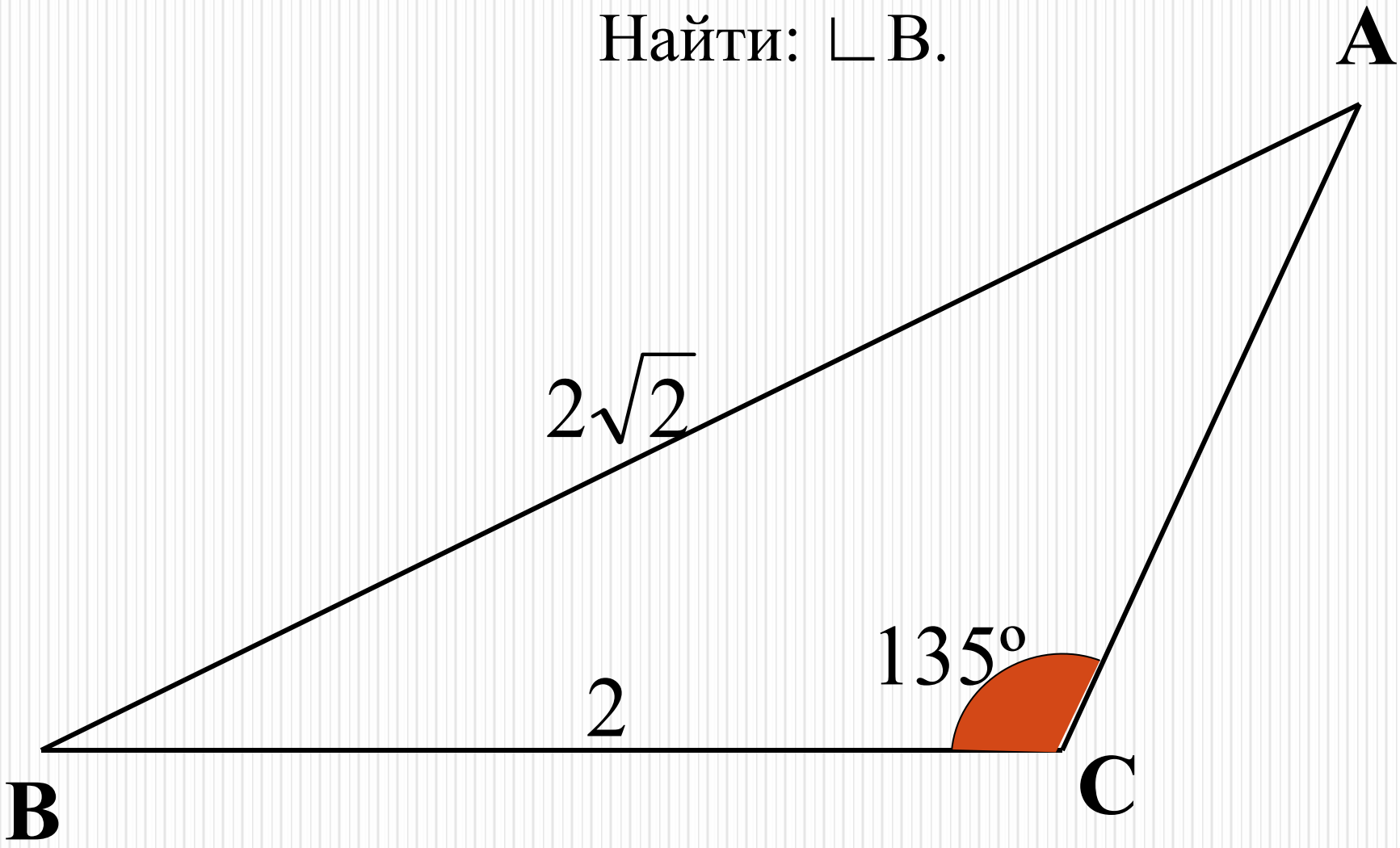


4.

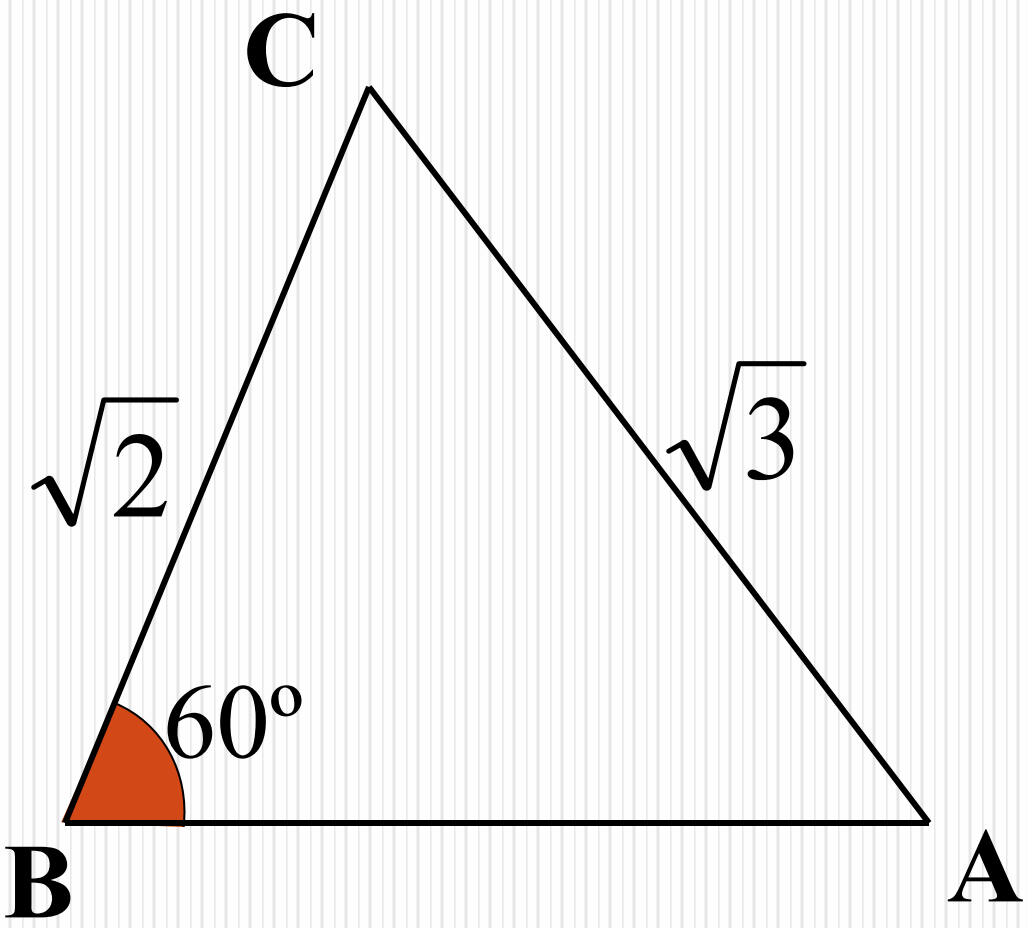
Найти: ∟A.



5. Найти: ∟B.



6. Найти: ∟C.



Ответы:

$$1.\ AB = \sqrt{41 - 20\sqrt{3}};$$

$$2.\ BC = 6\sqrt{3};$$

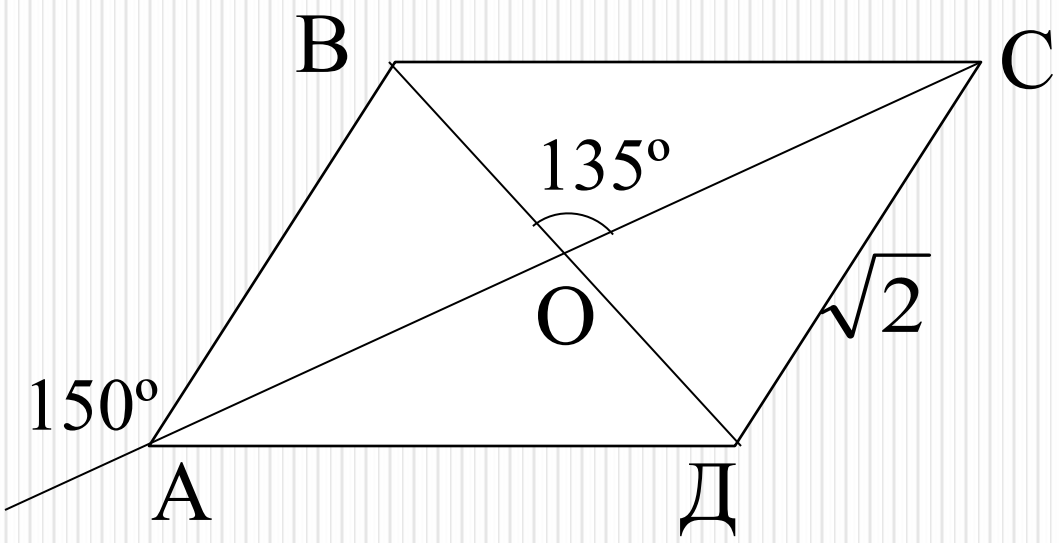
$$3.\ AB = \frac{4\sqrt{6}}{3};$$

$$4.\ \angle A = 60°;$$

$$5.\ \angle B = 15°;$$

$$6.\ \angle C = 75°.$$

Найдите ВД:



АВСД - параллелограмм

$$ВО = ОД = x$$

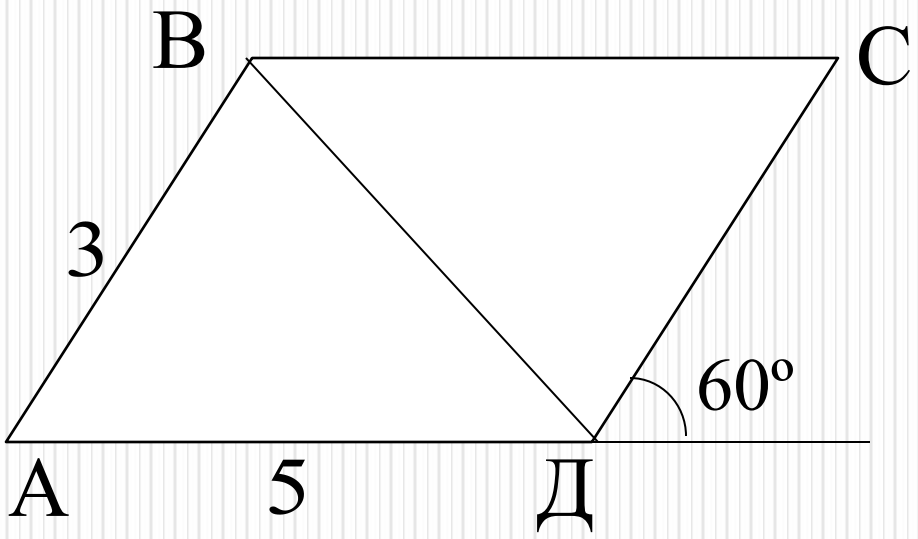
$$\angle ВОД = 45^\circ$$

$$\angle ОСД = 30^\circ$$

$$\frac{\sqrt{2}}{\sin 45^\circ} = \frac{x}{\sin 30^\circ}$$

$$x = 1 \qquad ВД = 2$$

Найдите ВД:



АВСД - параллелограмм

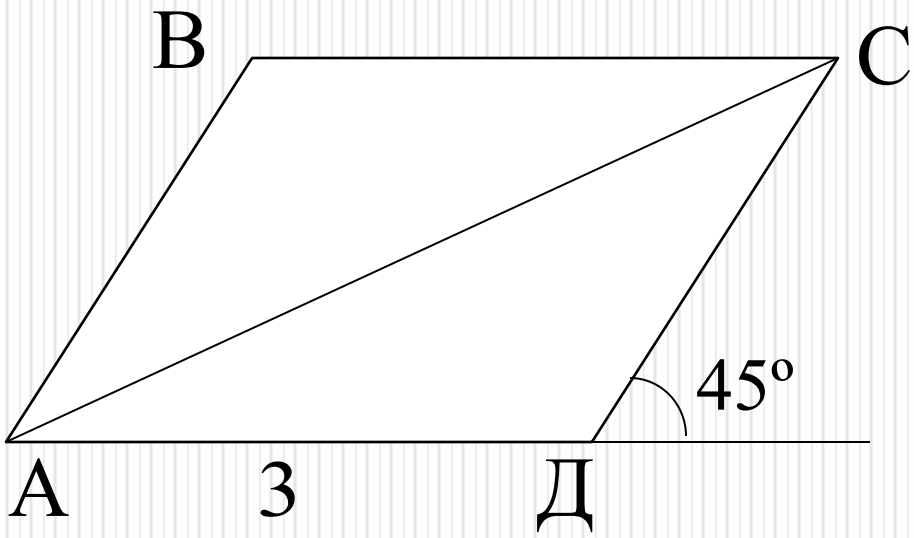
$$\angle BAД = 60^\circ$$

$$ВД^2 = AB^2 + АД^2 - 2AB \cdot АД \cos A$$

$$ВД^2 = 3^2 + 5^2 - 2 \cdot 3 \cdot 5 \cdot \cos 60^\circ$$

$$ВД^2 = 19 \qquad ВД = \sqrt{19}$$

Найдите АС:



АВСД - ромб

$\angle АДС = 135^\circ$

$$AC^2 = АД^2 + СД^2 - 2АД \cdot СД \cos Д$$

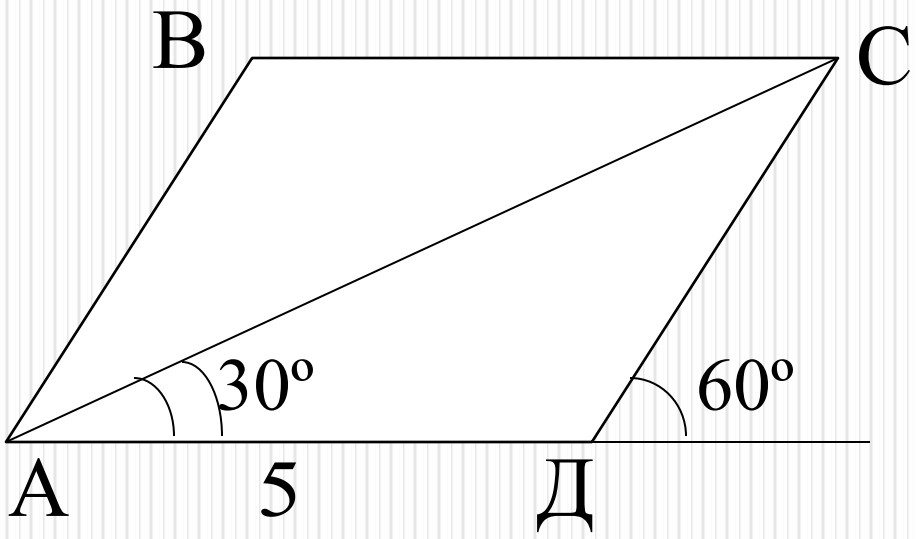
$$AC^2 = 3^2 + 3^2 - 2 \cdot 3 \cdot 3 \cdot \cos 135^\circ$$

$$AC^2 = 9 + 9 - 18 \cos 135^\circ$$

$$AC^2 = 9(2 + \sqrt{2})$$

$$AC = 3\sqrt{2 + \sqrt{2}}$$

Найдите АС:



АВСД - параллелограмм

$\angle АДС = 120^\circ$

$\angle АСД = 30^\circ$

$$\frac{x}{\sin 120^\circ} = \frac{5}{\sin 30^\circ}$$

$$AC = 5\sqrt{3}$$