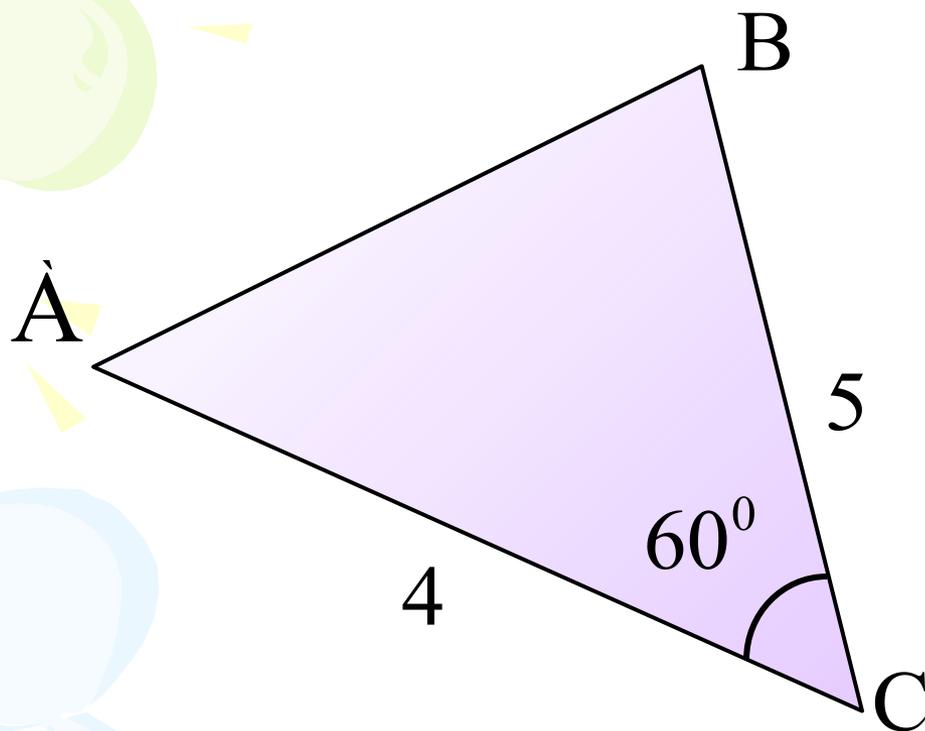




Теоремы синусов и косинусов

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	Литература		

Задача 1



$$BC = 5, AC = 4$$

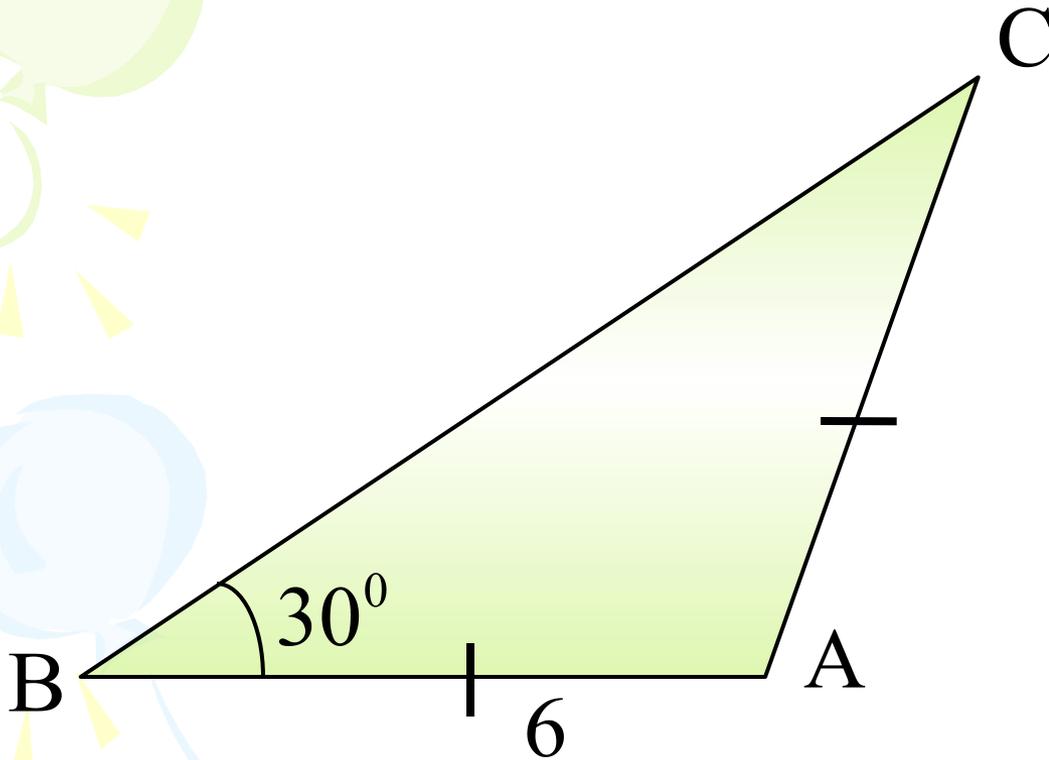
$$\angle ACB = 60^{\circ}$$

AB = ?

Ответ: $AB = \sqrt{21}$



Задача 2



$$AB = AC, AB = 6$$

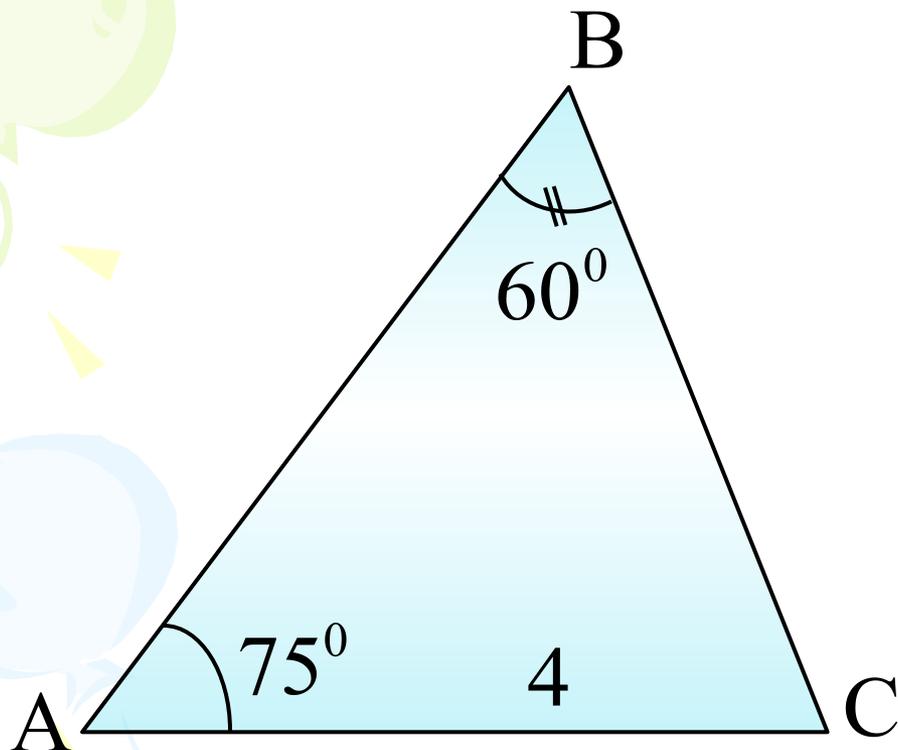
$$\angle ABC = 30^{\circ}$$

BC – ?

Ответ: $BC = 6\sqrt{3}$



Задача 3



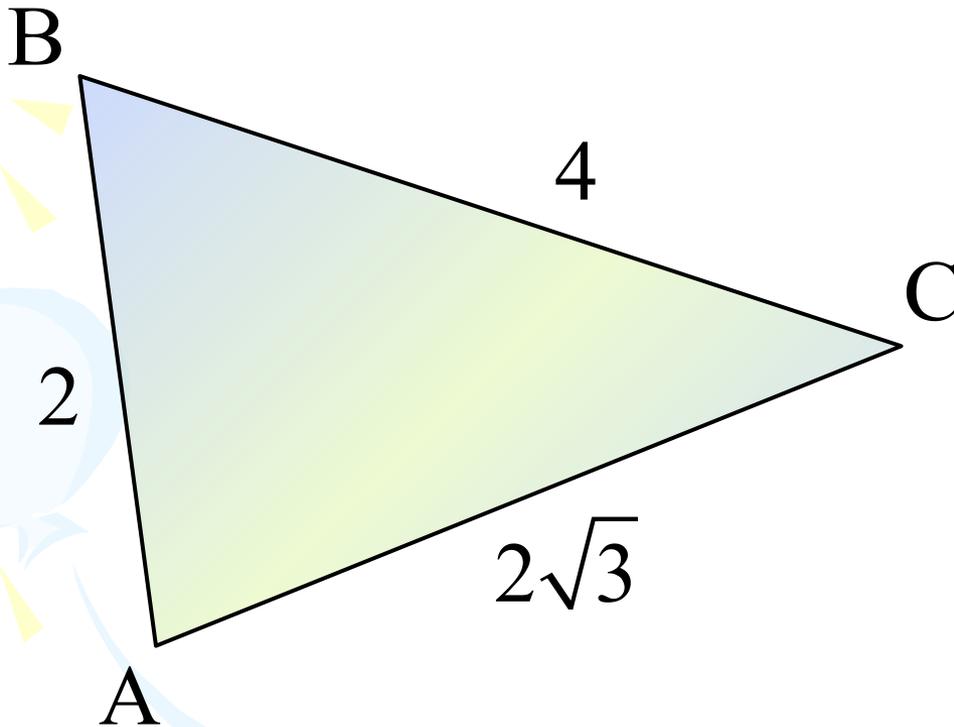
$$AC = 4, \angle BAC = 75^{\circ}$$
$$\angle ABC = 60^{\circ}$$

AB – ?

Ответ: $AB = \frac{4\sqrt{6}}{3}$



Задача 4



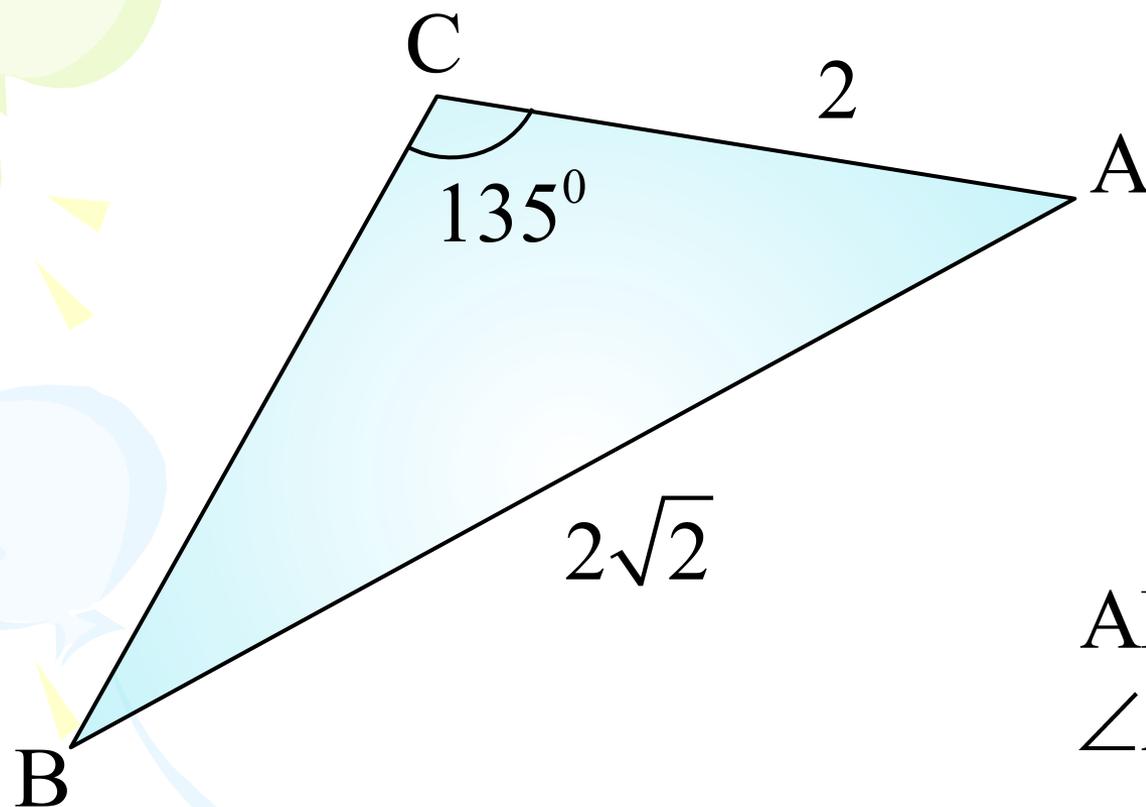
$$AB = 2, BC = 4,$$
$$AC = 2\sqrt{3}$$

$\angle B - ?$

Ответ: $\angle B = 60^{\circ}$



Задача 5



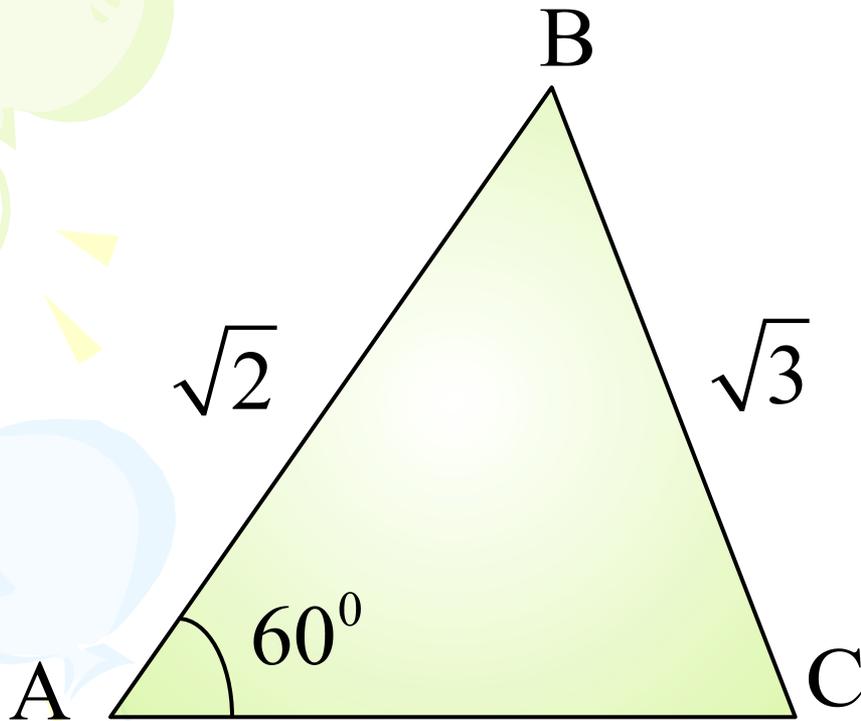
$$AB = 2\sqrt{2}, AC = 2,$$
$$\angle ACB = 135^{\circ}$$

$\angle A = ?$

Ответ: $\angle A = 15^{\circ}$



Задача 6



$$AB = \sqrt{2}, BC = \sqrt{3}$$

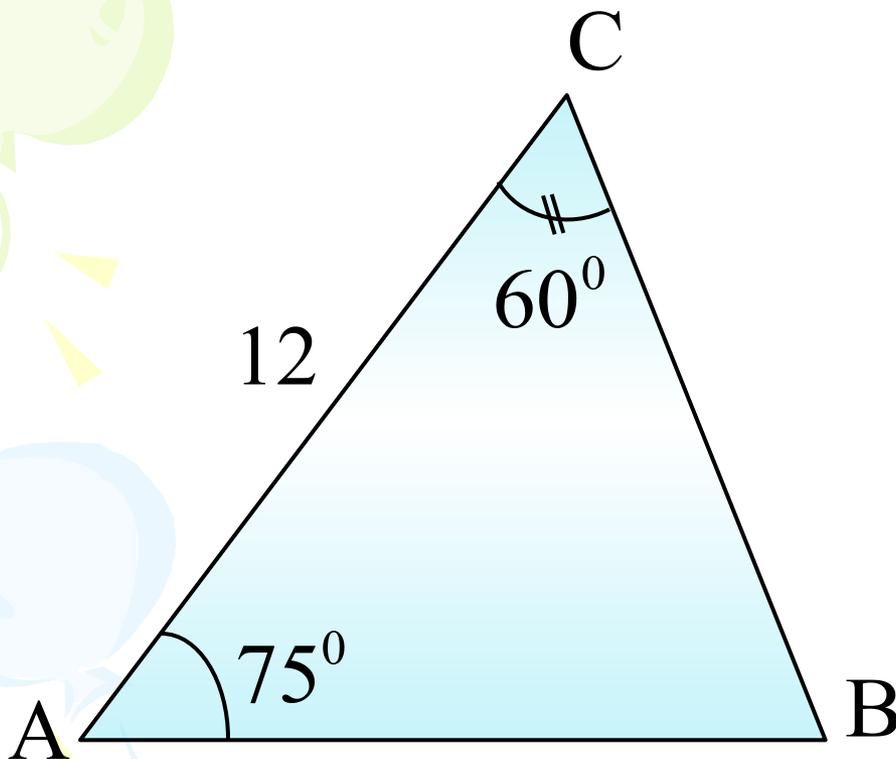
$$\angle BAC = 60^\circ$$

$\angle B = ?$

Ответ: $\angle B = 75^\circ$



Задача 7



$$AC = 12, \angle BAC = 75^{\circ}$$

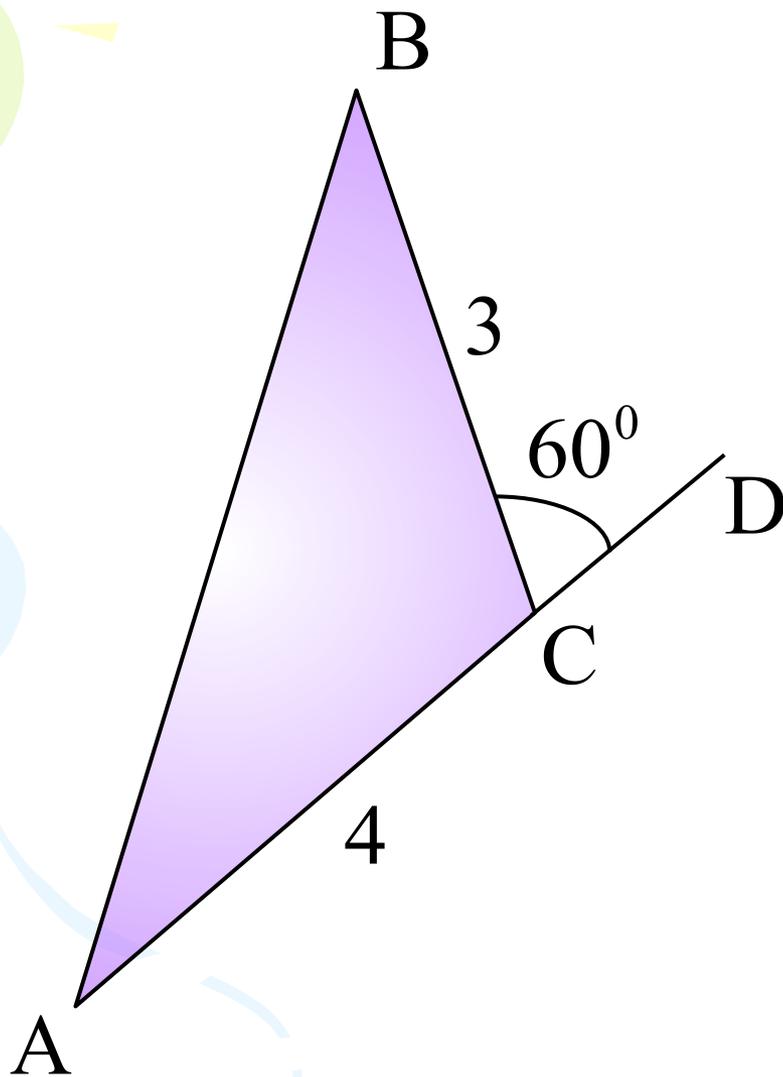
$$\angle BCA = 60^{\circ}$$

AB – ?

Ответ: $AB = 6\sqrt{6}$



Задача 8



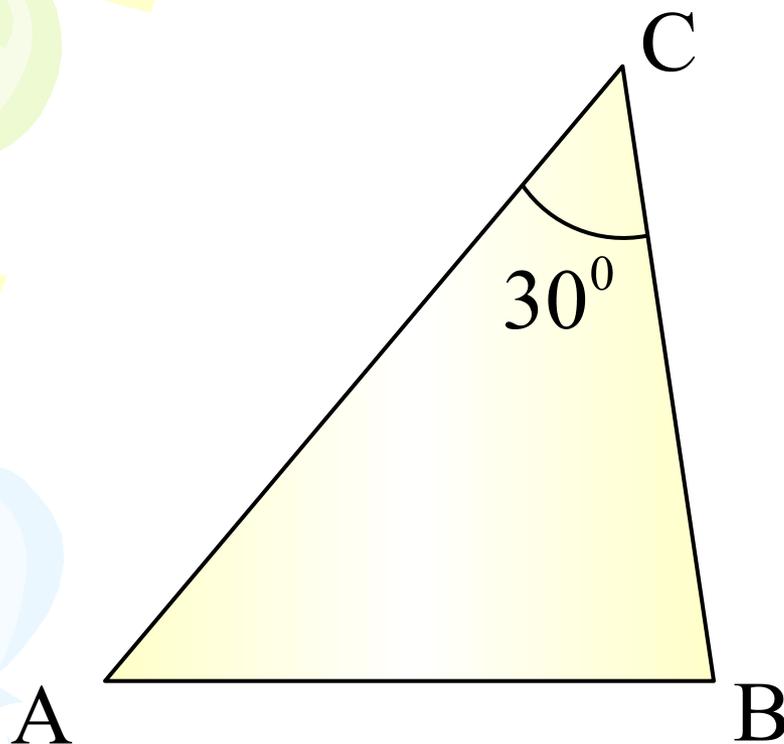
$$AC = 4, BC = 3$$

$$\angle DCB = 60^\circ$$

AB – ?

Ответ: $AB = \sqrt{37}$

Задача 9



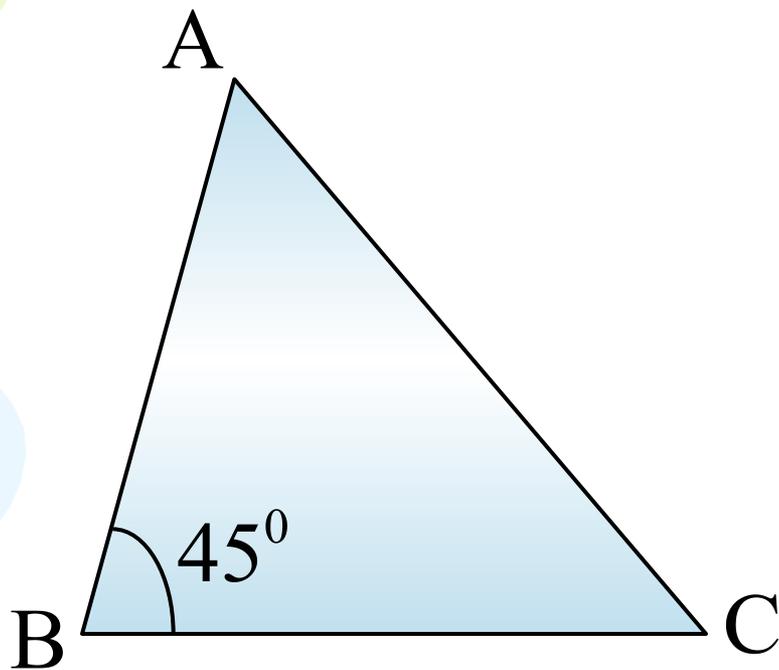
$$d = 14$$

AB – ?

Ответ: AB = 7



Задача 10



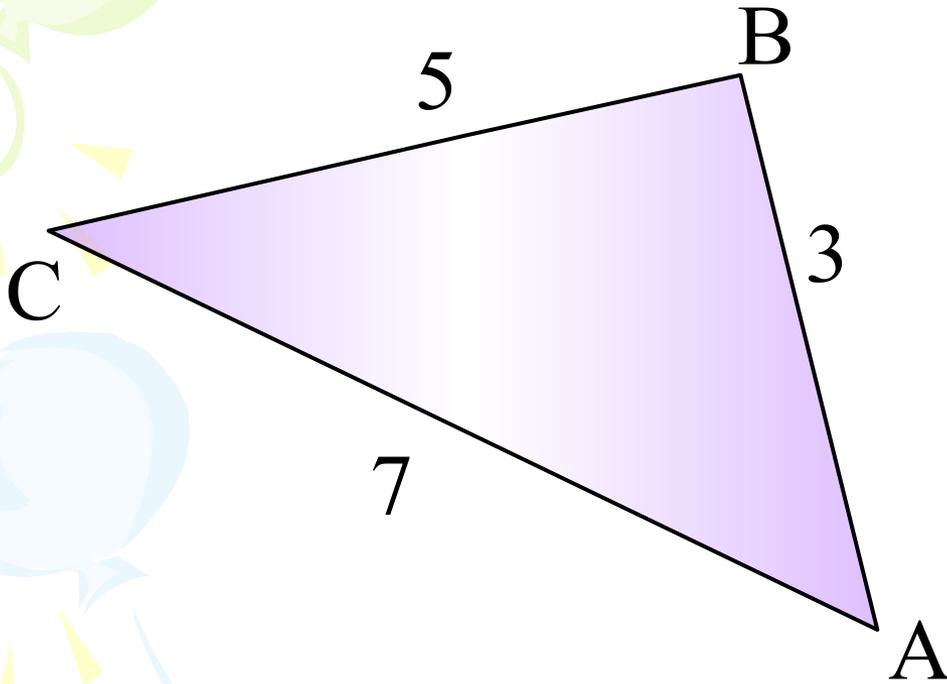
$$AC = 4\sqrt{2}$$

R – ?

Ответ: R = 4



Задача 11



$$AC = 7, BC = 5,$$

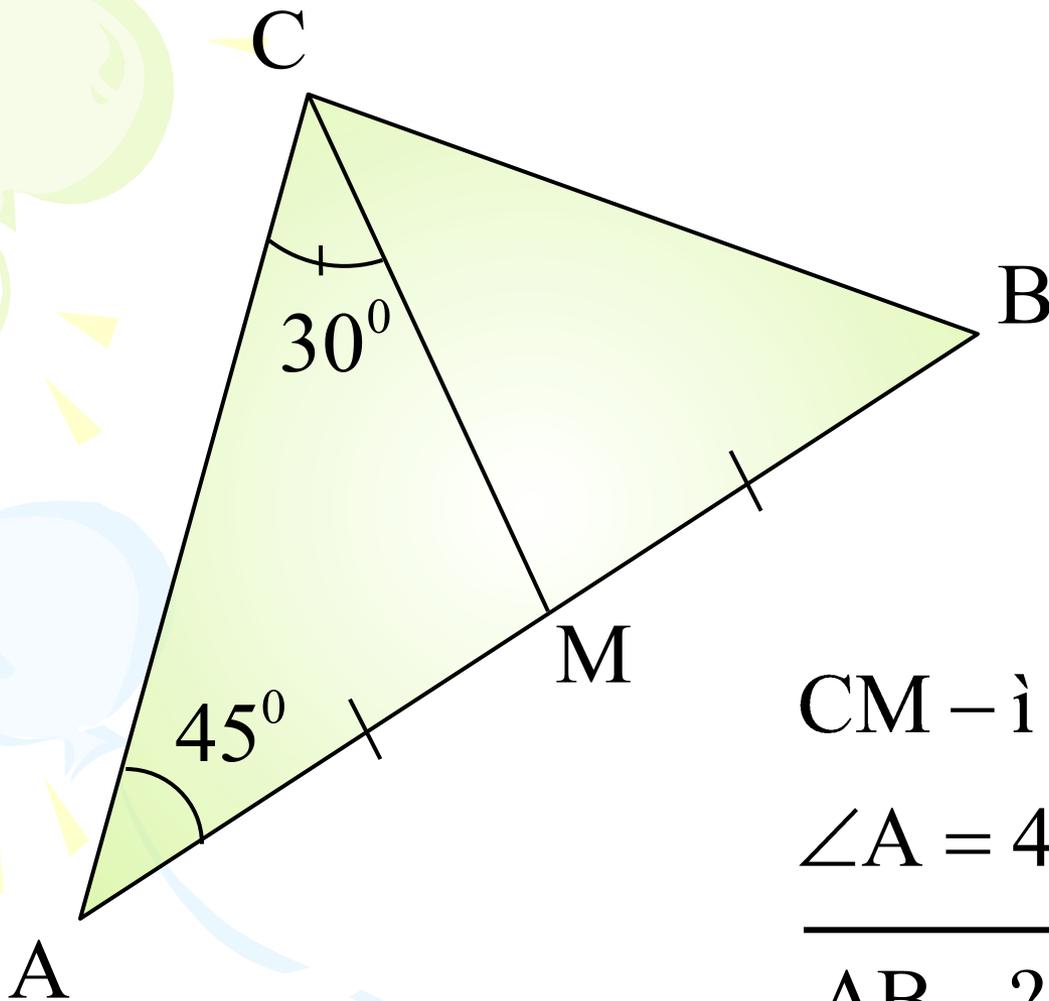
$$AB = 3$$

$\angle B = ?$

Ответ: $\angle B = 120^{\circ}$



Задача 12



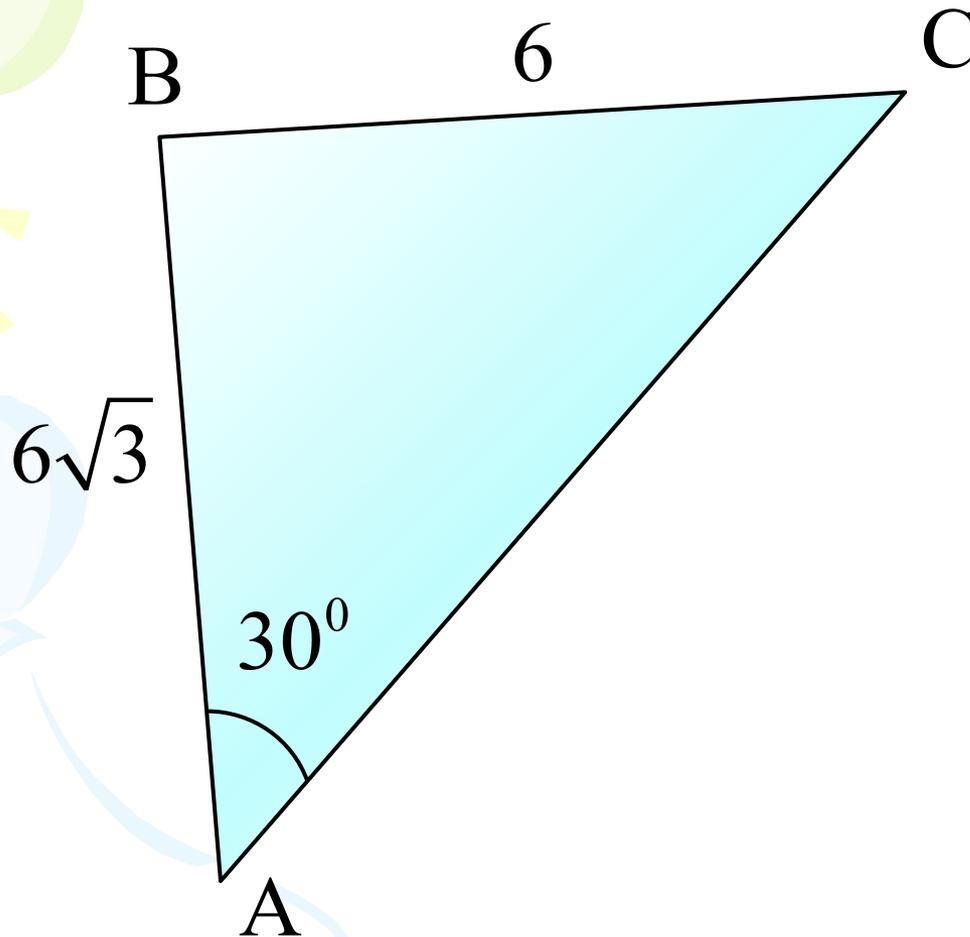
$$CM - \text{перпендикуляр } \overline{AB}, CM = \frac{13\sqrt{2}}{4},$$
$$\angle A = 45^\circ, \angle ACM = 30^\circ$$

$AB = ?$

Ответ: $AB = 6,5$



Задача 13



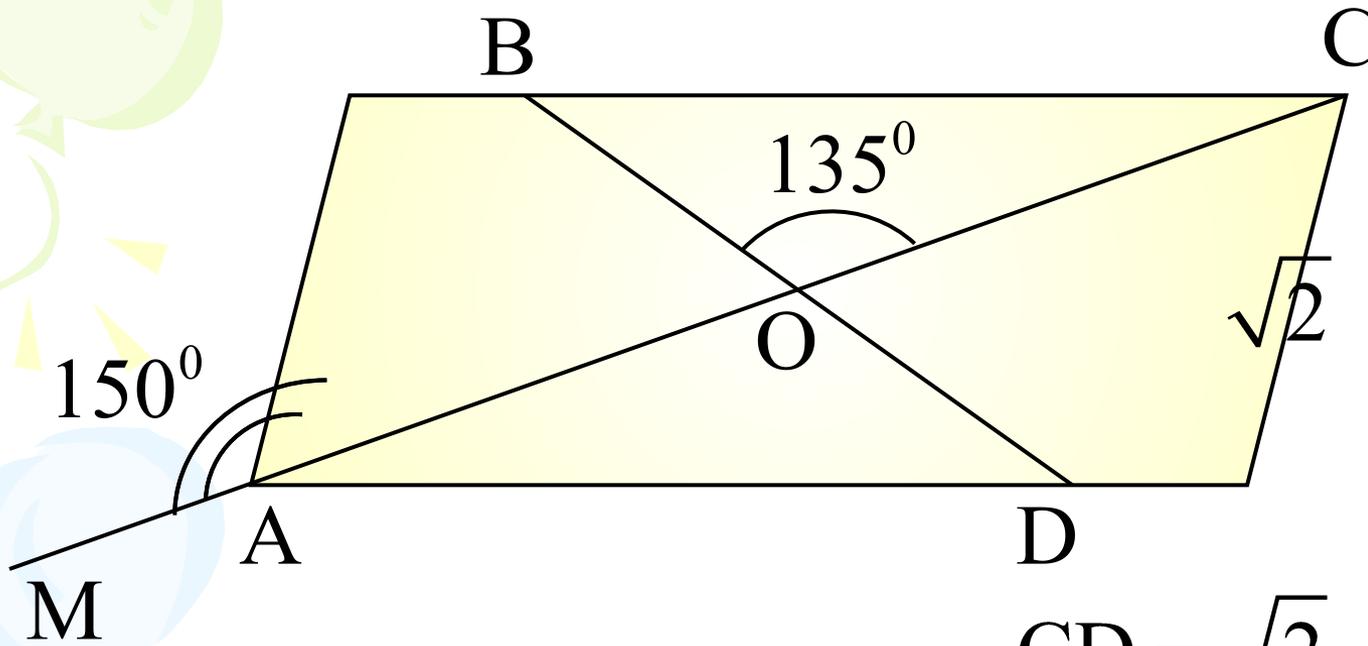
$$AB = 6\sqrt{3}, BC = 6,$$
$$\angle CAB = 30^\circ$$

$$\angle B - ? \quad \angle C - ?$$

Ответ: $\angle C = 60^\circ, \angle B = 90^\circ$



Задача 14



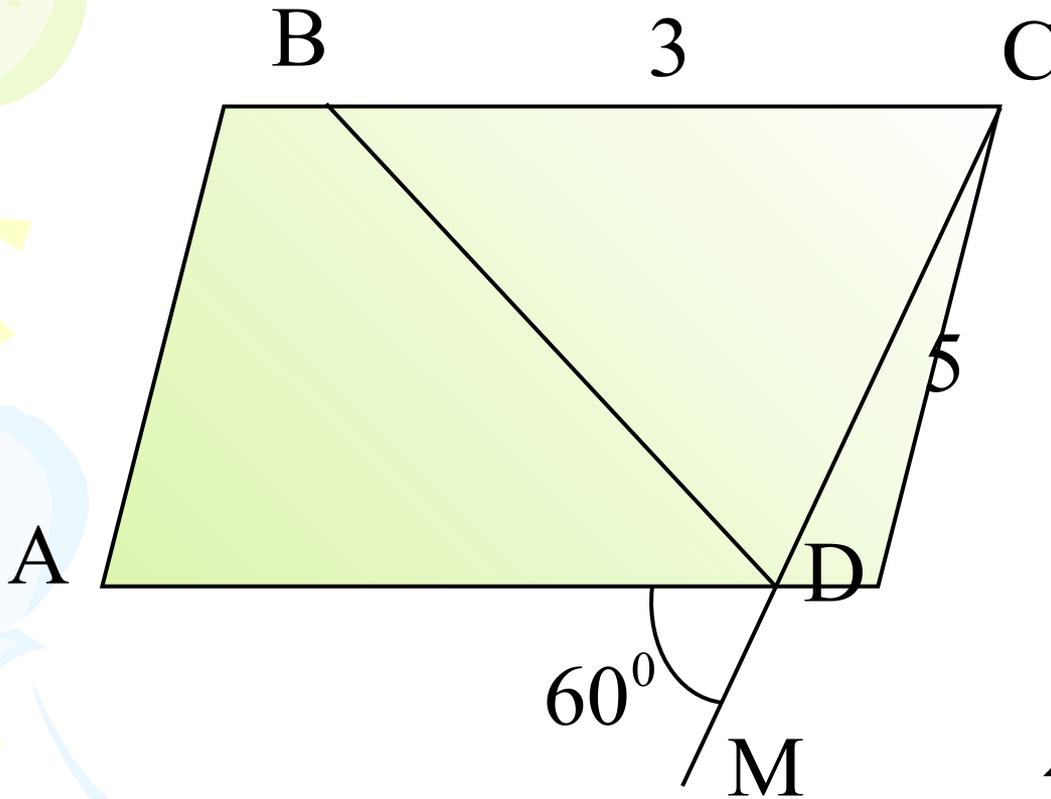
$CD = \sqrt{2}$, $\angle BOC = 135^\circ$,
 $\angle MAB = 150^\circ$

BD – ?

Ответ: $BD = 2$



Задача 15

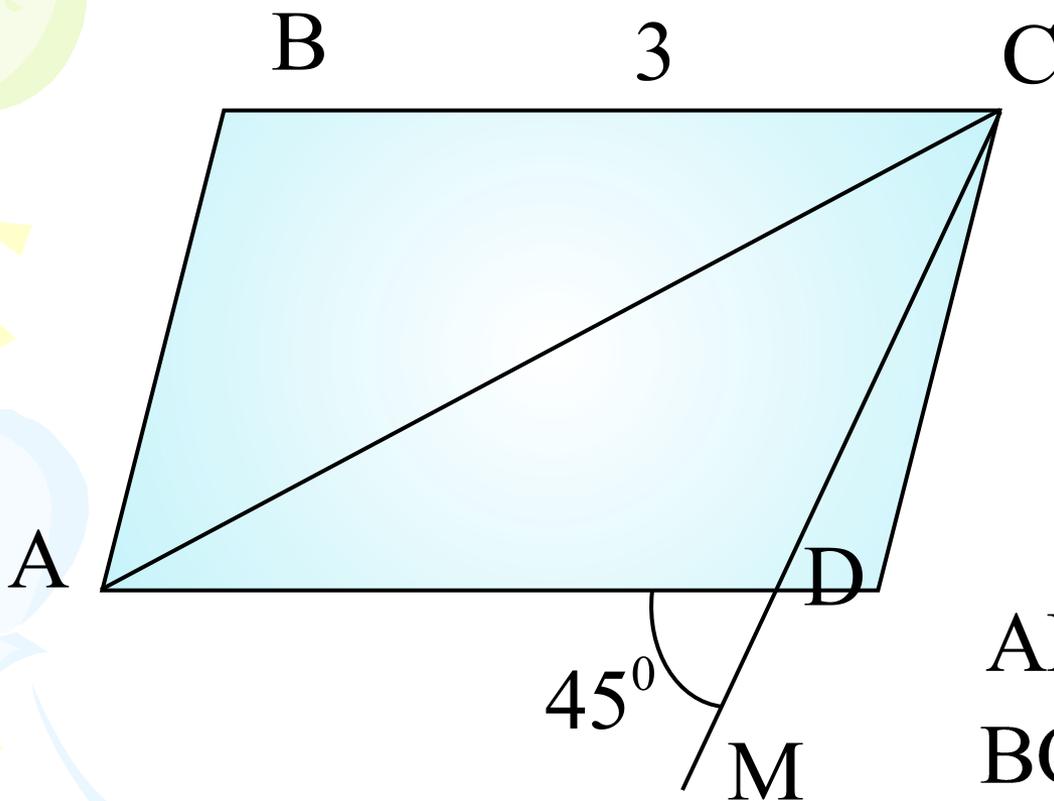


$$BC = 3, CD = 5,$$
$$\angle ADM = 60^{\circ}$$

BD – ?

Ответ: $BD = \sqrt{19}$

Задача 16



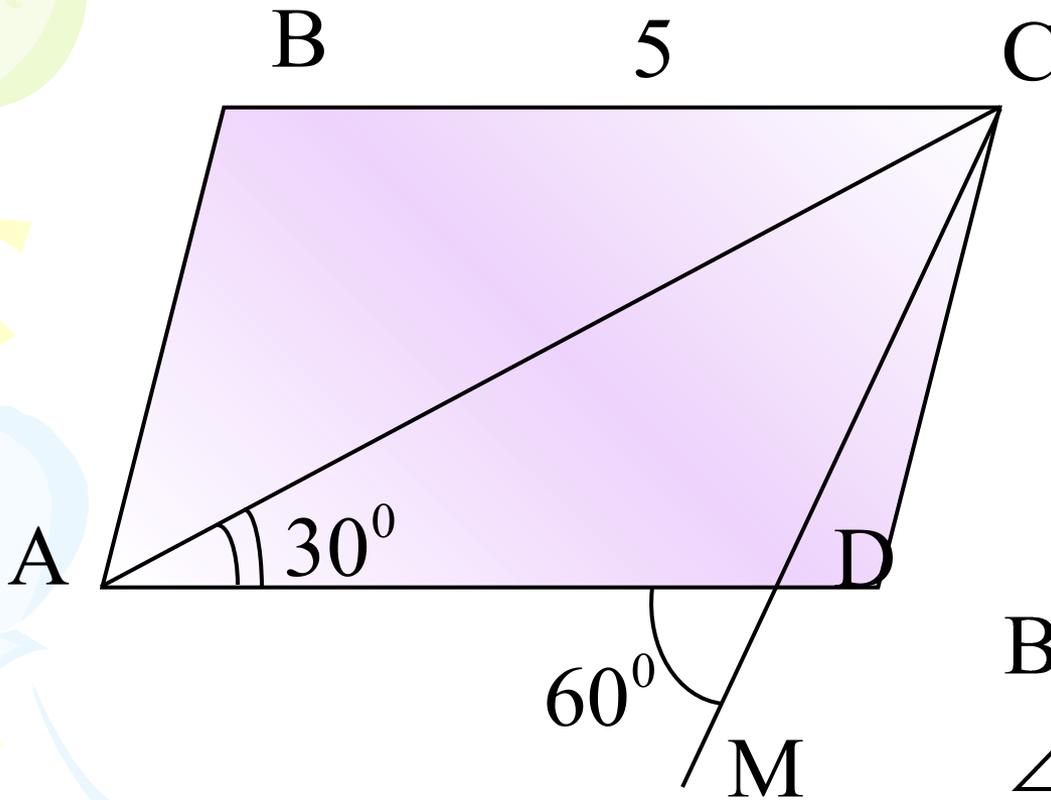
$ABCD$ – ðî ì á,
 $BC = 3, \angle ADM = 45^0$

AC – ?

Ответ:

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

Задача 17



$$BC = 5, \angle ADM = 60^\circ$$

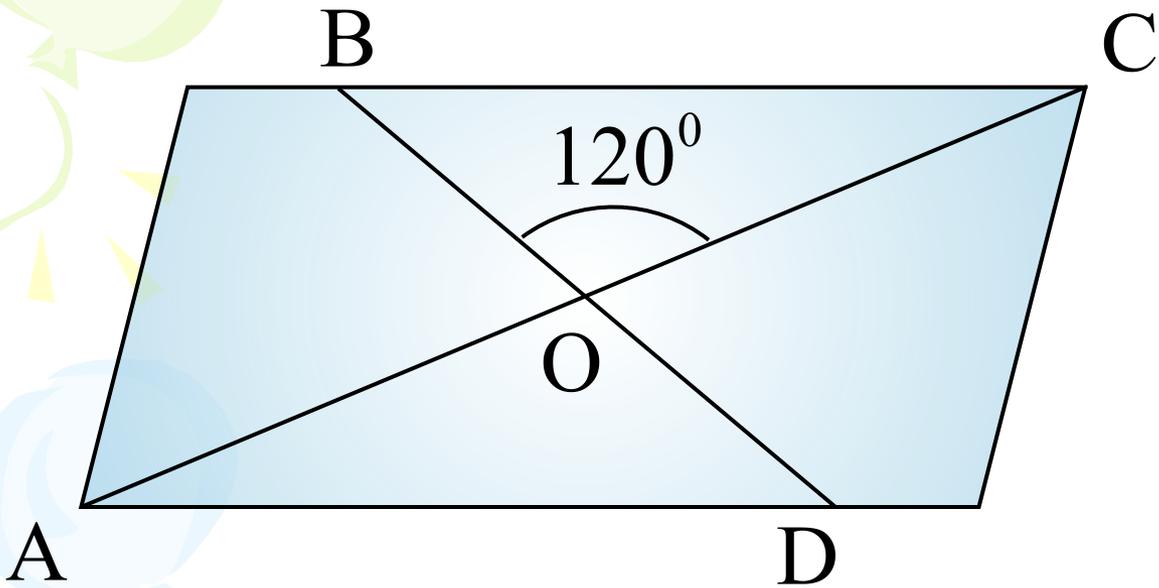
$$\angle CAD = 30^\circ$$

$AC = ?$

Ответ:

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

Задача 18



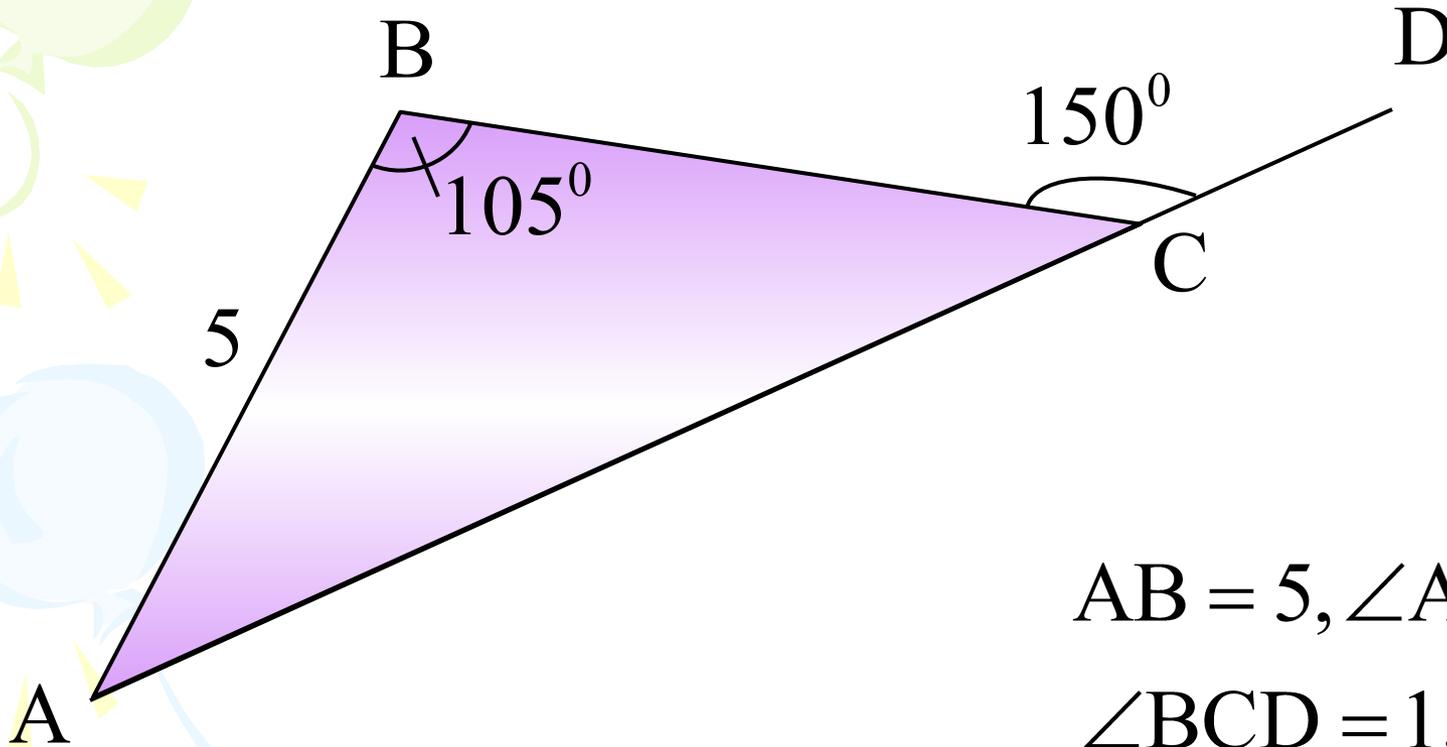
$$AC = 10, BD = 6,$$

$$\angle BOC = 120^\circ$$

$$P_{ABCD} = ?$$

Ответ: $P_{ABCD} = 14 + 2\sqrt{19}$

Задача 19

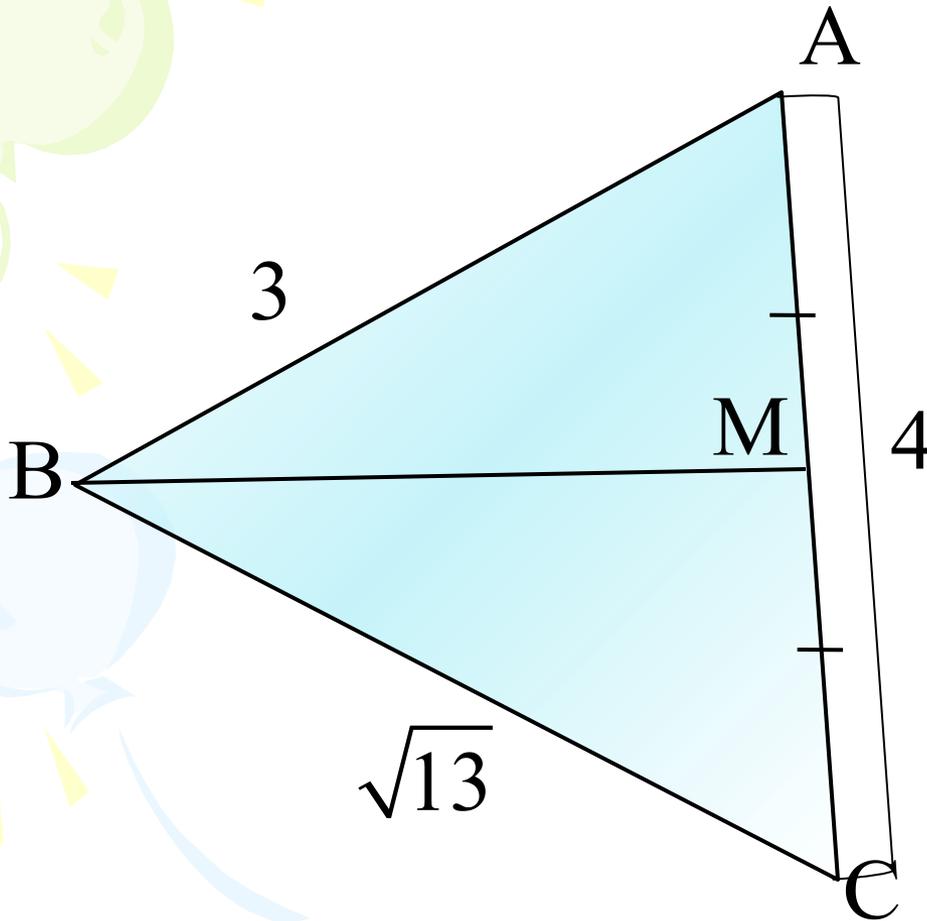


$$AB = 5, \angle ABC = 105^{\circ},$$
$$\angle BCD = 150^{\circ}$$

BC – ?

Ответ: $BC = 5\sqrt{2}$

Задача 20



$$AB = 3, AC = 4,$$

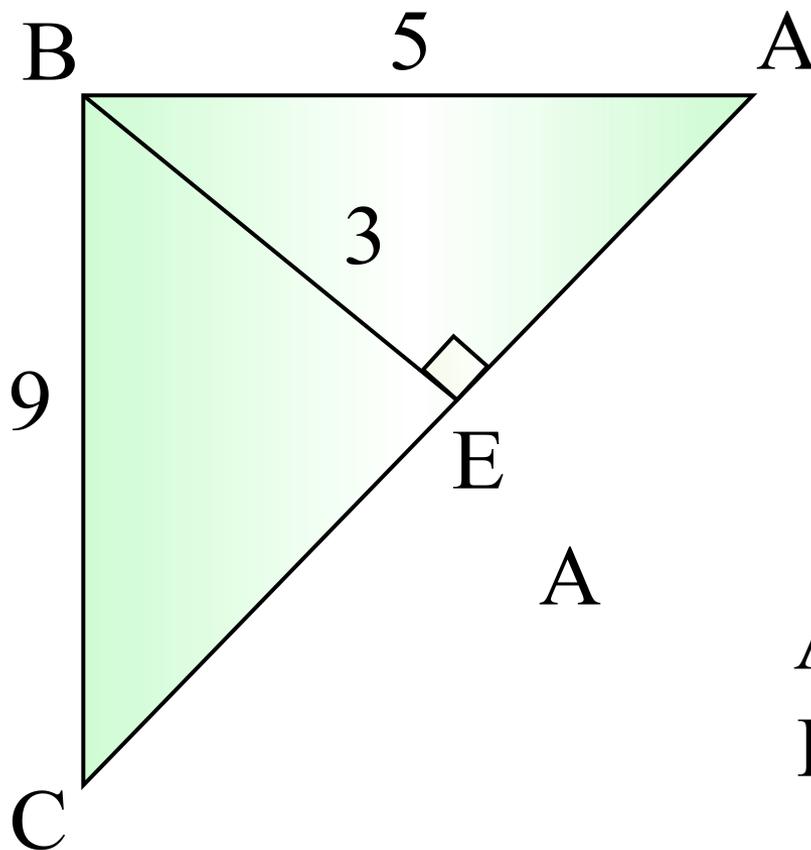
$$BC = \sqrt{13}$$

M – середина AC

$BM = ?$

Ответ: $BM = \sqrt{7}$

Задача 21*

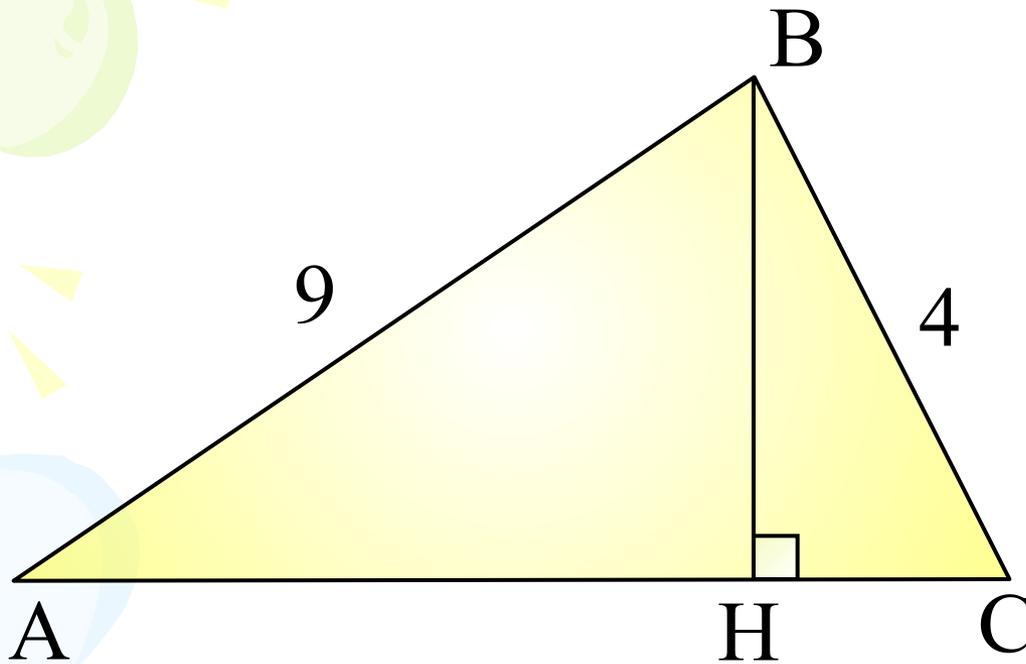


$AB = 5, BC = 9,$
 $BE \perp AC, BE = 3$

$R_{ABC} - ?$

Ответ: $R = 7,5$

Задача 22*

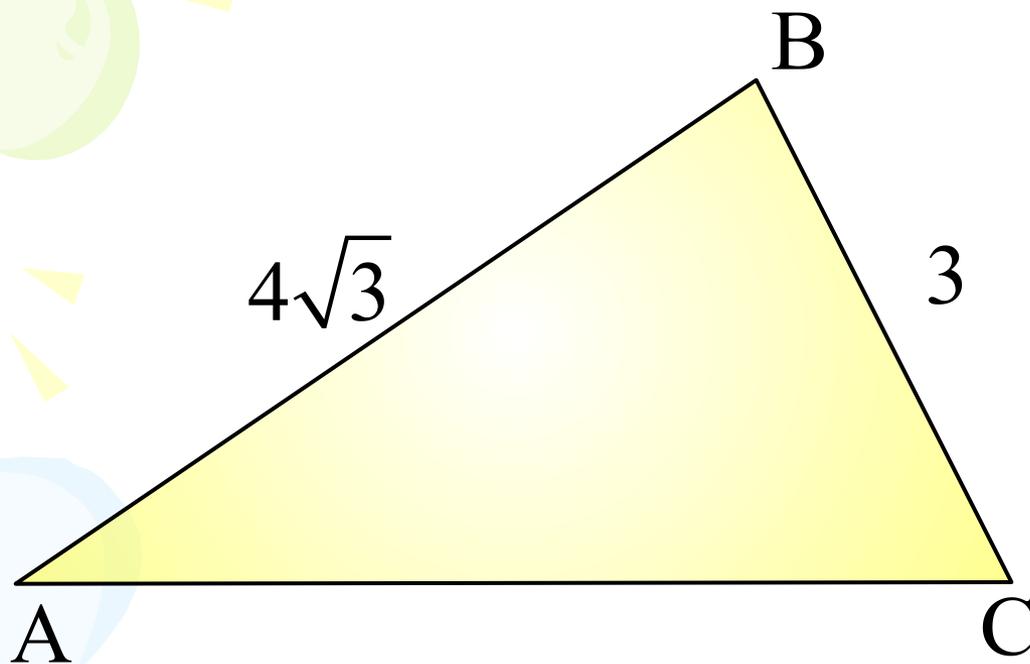


$$AB = 9, BC = 4,$$
$$R = 6, BH \perp AC$$

$BH = ?$

Ответ: $BH = 3$

Задача 23*

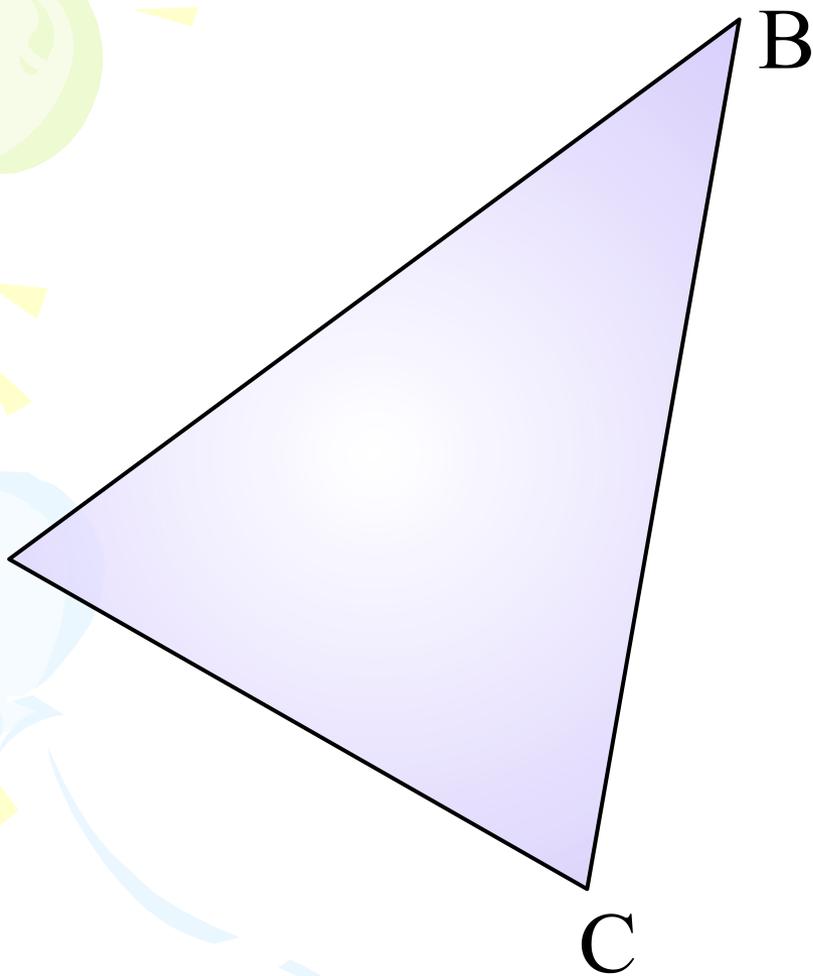


$$AB = 4\sqrt{3}, BC = 3,$$
$$S_{ABC} = 3\sqrt{3}$$

AC – ?

Ответ: $AC = \sqrt{93}, AC = \sqrt{21}$

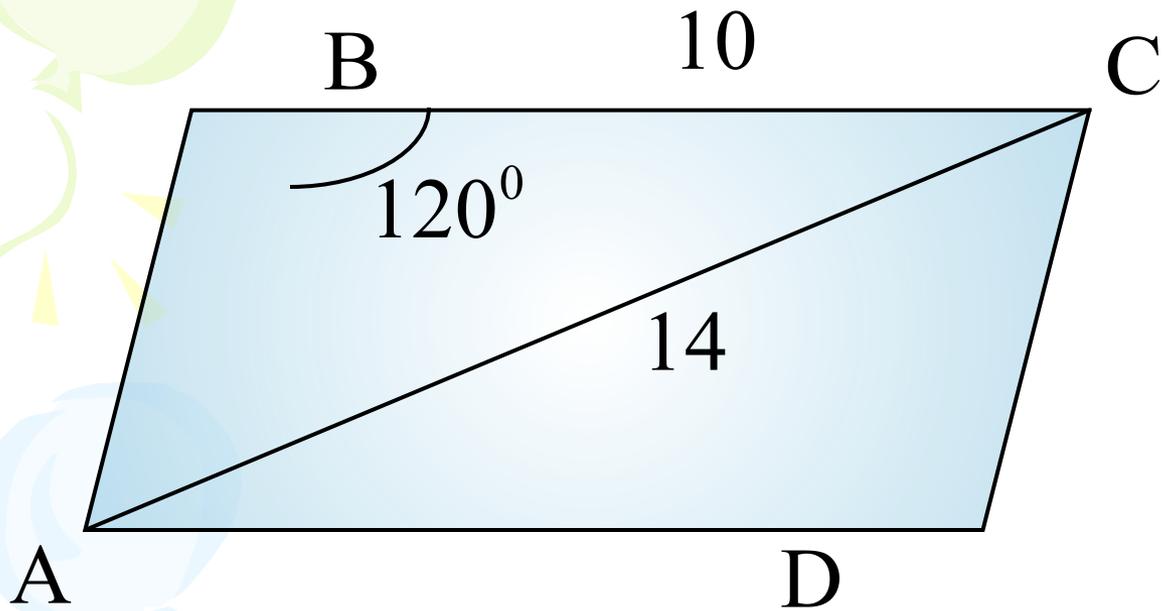
Задача 24*



$$\frac{AB : BC : R = \sqrt{3} : \sqrt{2} : 1}{\angle A, \angle B - ? \quad \angle C - ?}$$

Ответ: $\angle A = 45^\circ, \angle B = 75^\circ, \angle C = 60^\circ$

*Задача 25**

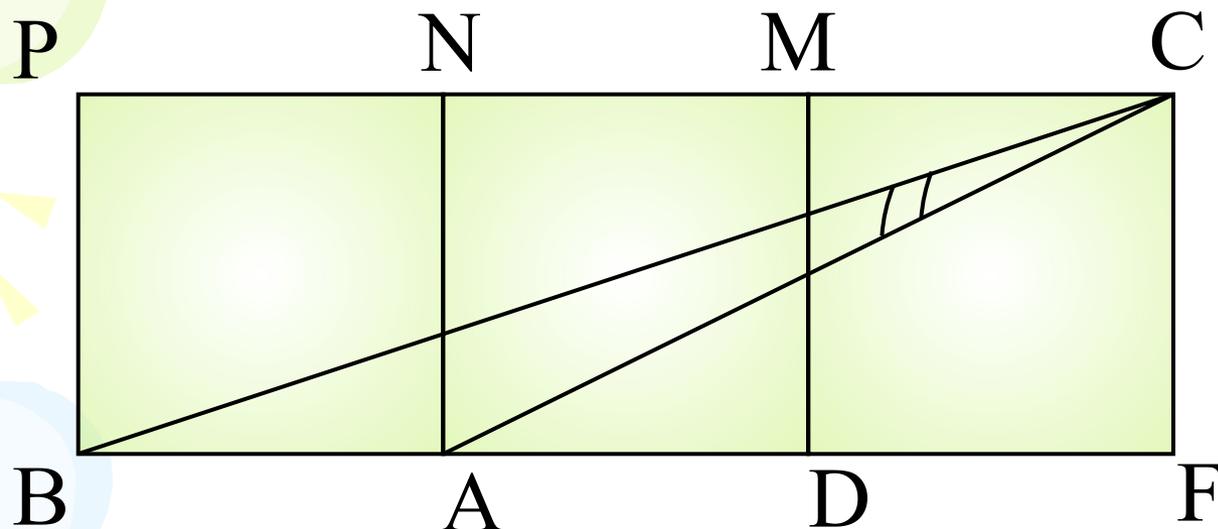


$$AC = 14, BC = 10,$$
$$\angle B = 120^{\circ}$$

AB – ?

Ответ: AB = 6

Задача 26*

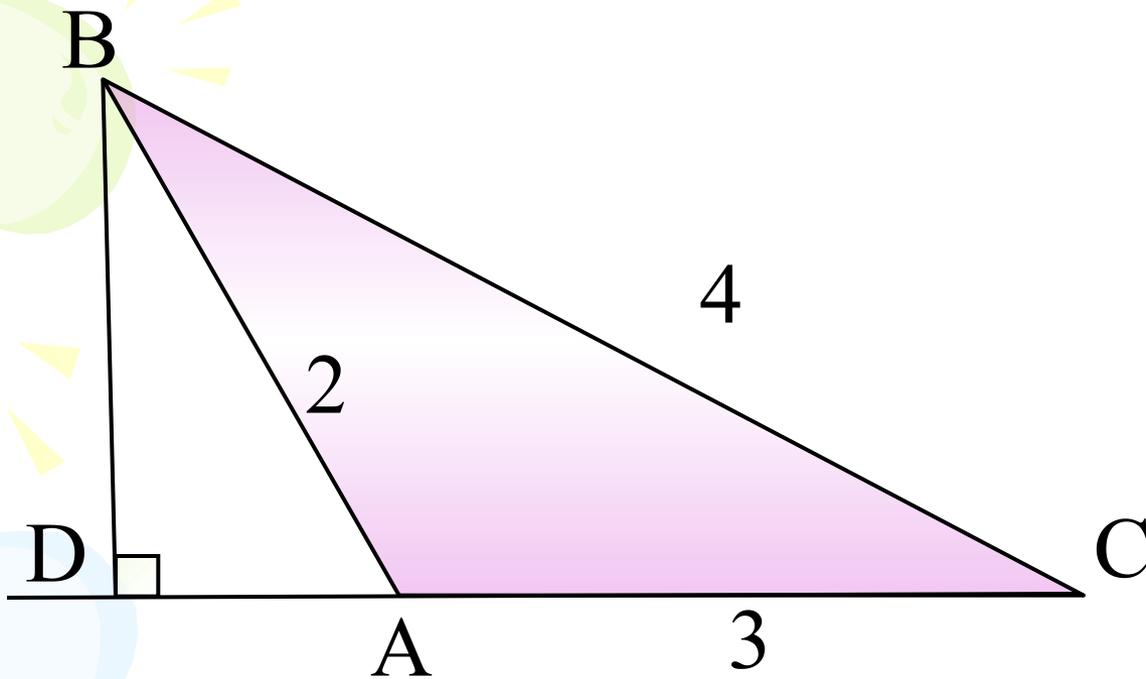


BPNA, ANMD,
DMCF – еâàäðàòù

$\cos \angle BCA - ?$

Ответ: $\cos \angle BCA = \frac{7\sqrt{2}}{10}$

Задача 27*



$$AB = 2, BC = 4,$$
$$AC = 3, BD \perp AC$$

BD – ?

Ответ: $BD = \frac{\sqrt{15}}{2}$



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