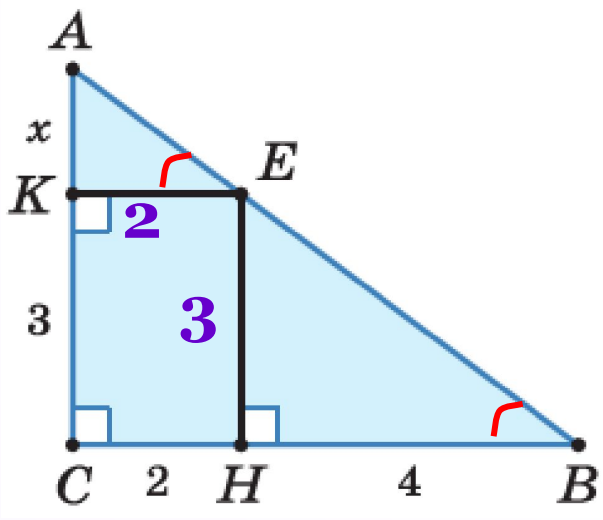
Проверка домашнего задания

№ (г)



1) $\angle AKE = \angle EHB = 90^\circ$

$\angle AEK = \angle B$ (СУ при $KE \parallel BC$ и сек. AB)

$\xrightarrow{\text{УУ}} \Delta AKE \sim \Delta EHB$

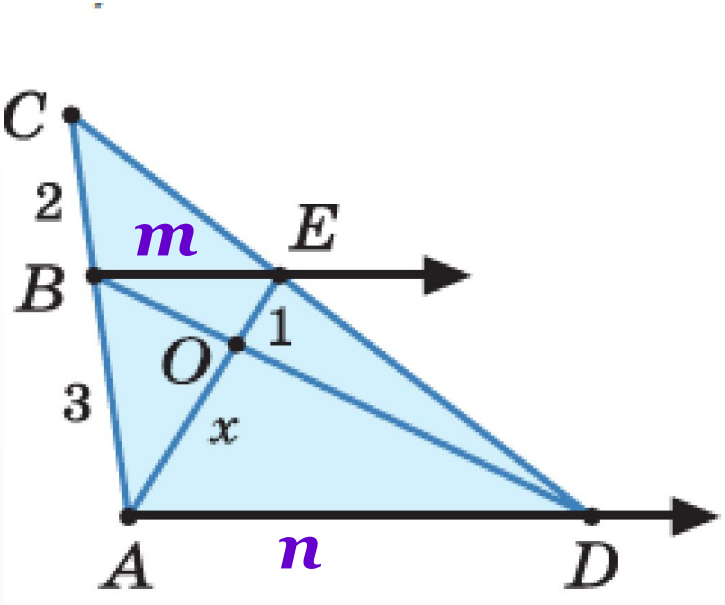
$$\frac{HE}{AK} = \frac{HB}{KE}$$

2) $\dfrac{3}{x} = \dfrac{4}{2}$

$x = 1{,}5$

Ответ: 1,5.

№ (к)



1) $\Delta CBE \sim \Delta CAD$

$$\frac{2}{5} = \frac{m}{n}$$

2) $\Delta BOE \sim \Delta AOD$

$$\frac{1}{x} = \frac{m}{n}$$

3) $\frac{2}{5} = \frac{1}{x}$

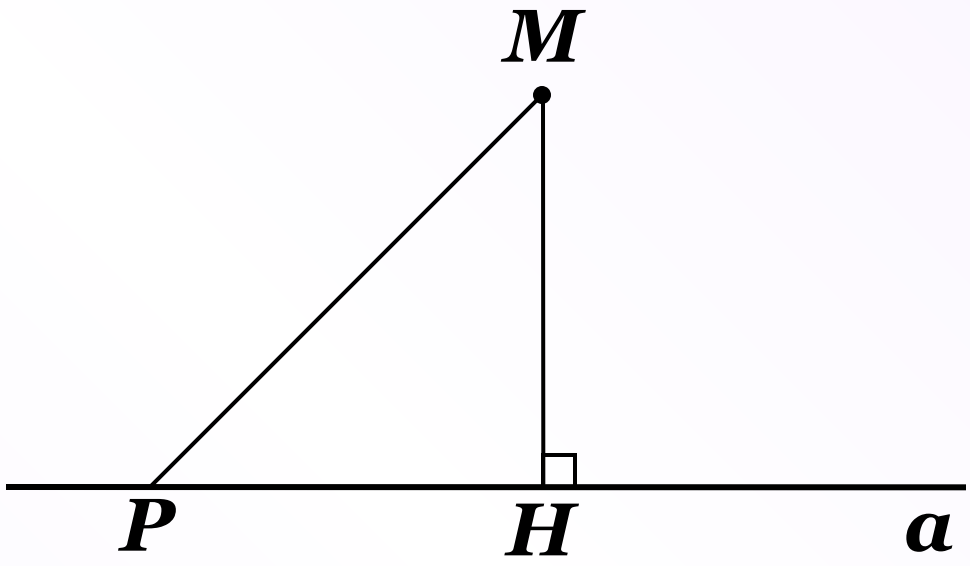
$x = 2{,}5$

Ответ: 2,5.

*

К л а с с н а я р а б о т а.

Пропорциональные отрезки в прямоугольном треугольнике



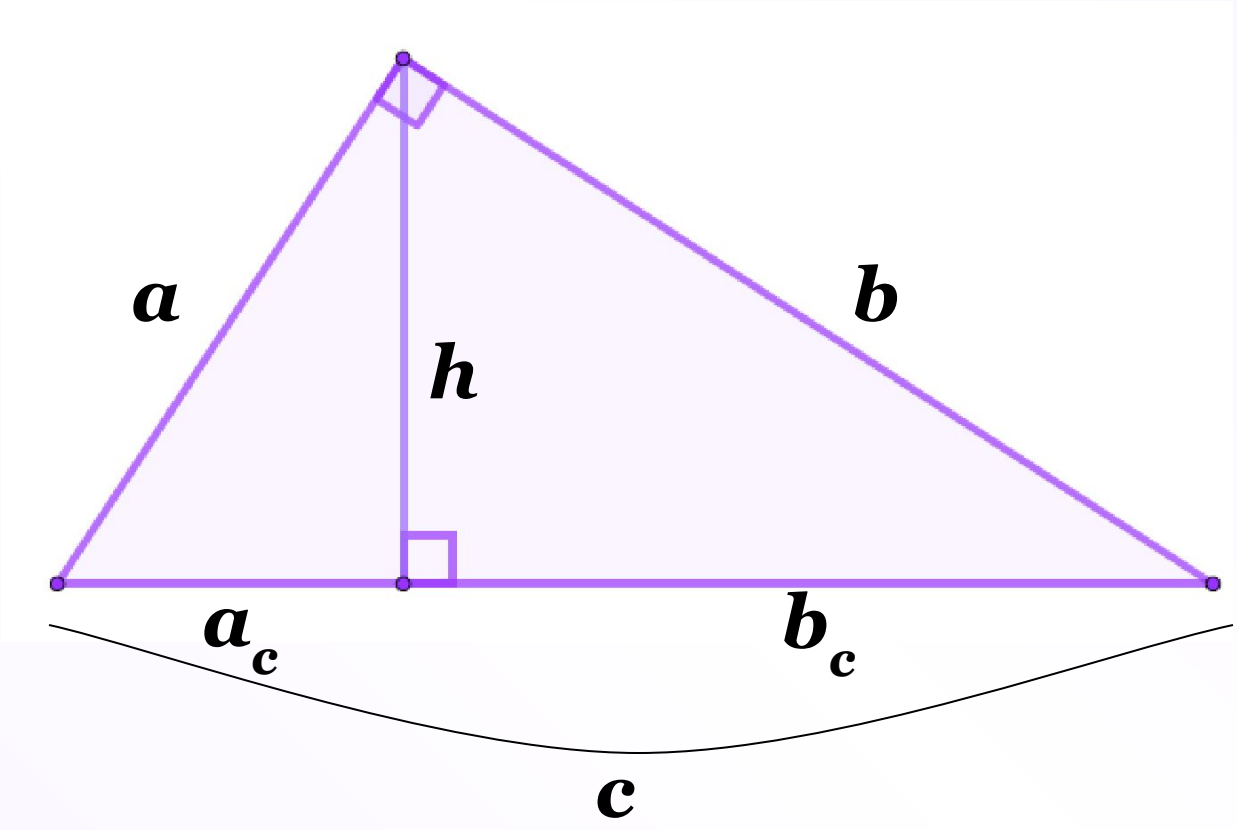
MH **– перпендикуляр**

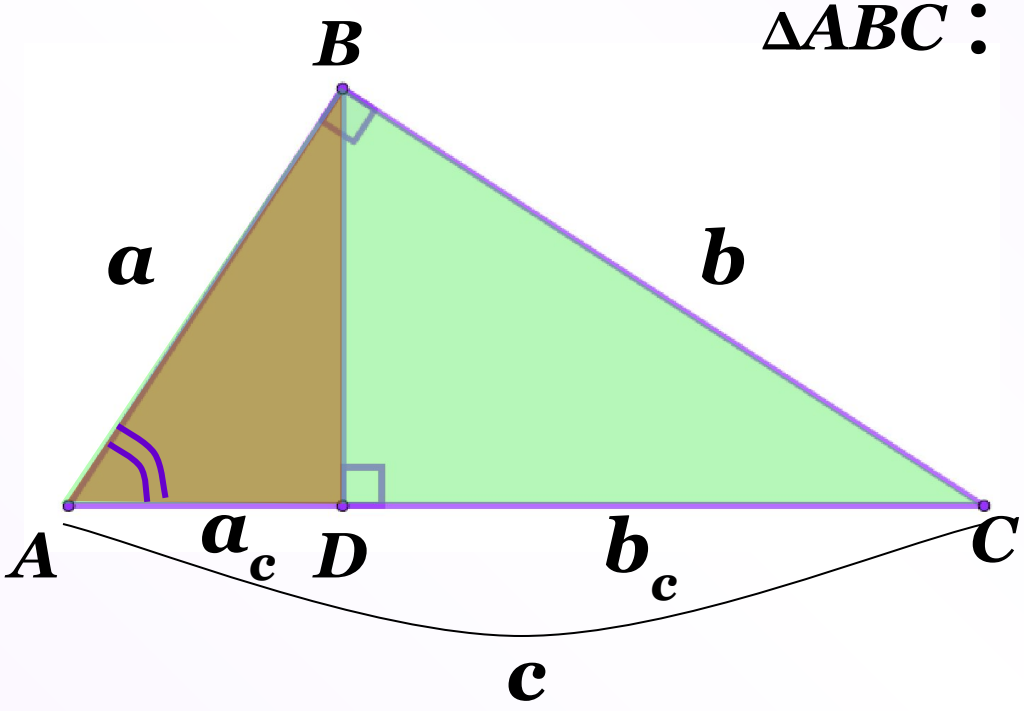
MP **– наклонная**

тч. *H* – основание перпендикуляра

тч. *P* – основание наклонной

PH **– проекция наклонной *MP* на прямую *a***


a
b
h
a_c
b_c
c



ΔABC : ΔABD по двум углам

$$\frac{AC}{AB} = \frac{AB}{AD}$$

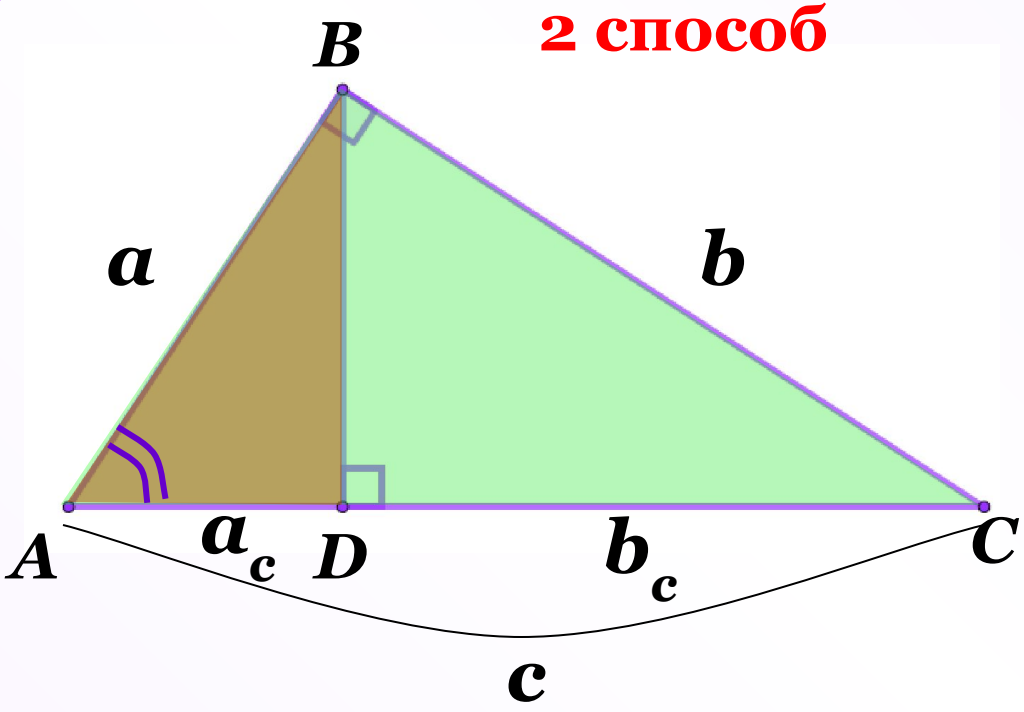
$$AB^2 = AC \cdot AD$$

$$AB = \sqrt{AC \cdot AD}$$

$$\boxed{a = \sqrt{c \cdot a_c}}$$

Аналогично, $\boxed{b = \sqrt{\quad \cdot \quad c}}$

2 способ



1) Из ΔABD:

$$\cos A = \frac{a_c}{a}$$

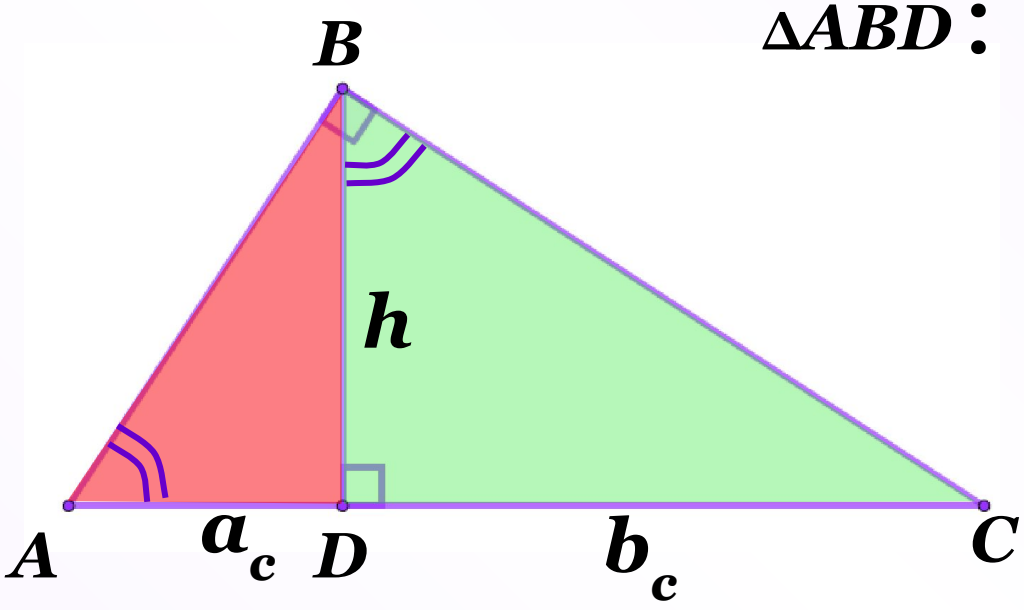
из ΔABC:

$$\cos A = \frac{a}{c}$$

2) $$\frac{a_c}{a} = \frac{a}{c}$$

$$a^2 = c \cdot a_c$$

$$\boxed{a = \sqrt{c \cdot a_c}}$$



ΔABD : ΔBCD по двум углам

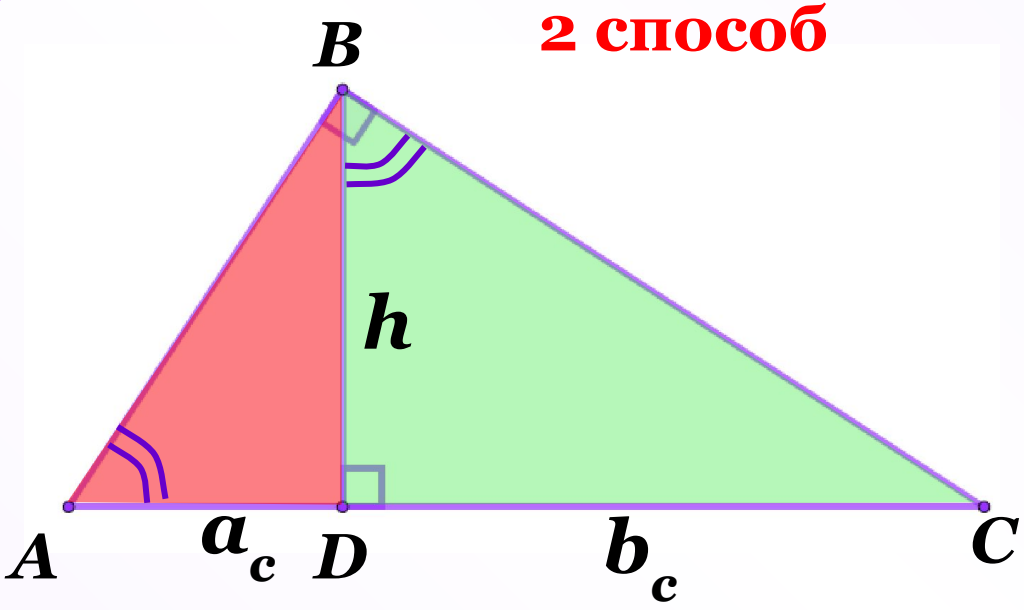
$$\frac{BD}{DC} = \frac{AD}{BD}$$

$$BD^2 = AD \cdot DC$$

$$BD = \sqrt{AD \cdot DC}$$

$$h = \sqrt{a_c \cdot b_c}$$

2 способ



1) Из ΔABD:

$$\mathrm{tg}A = \frac{h}{a_c}$$

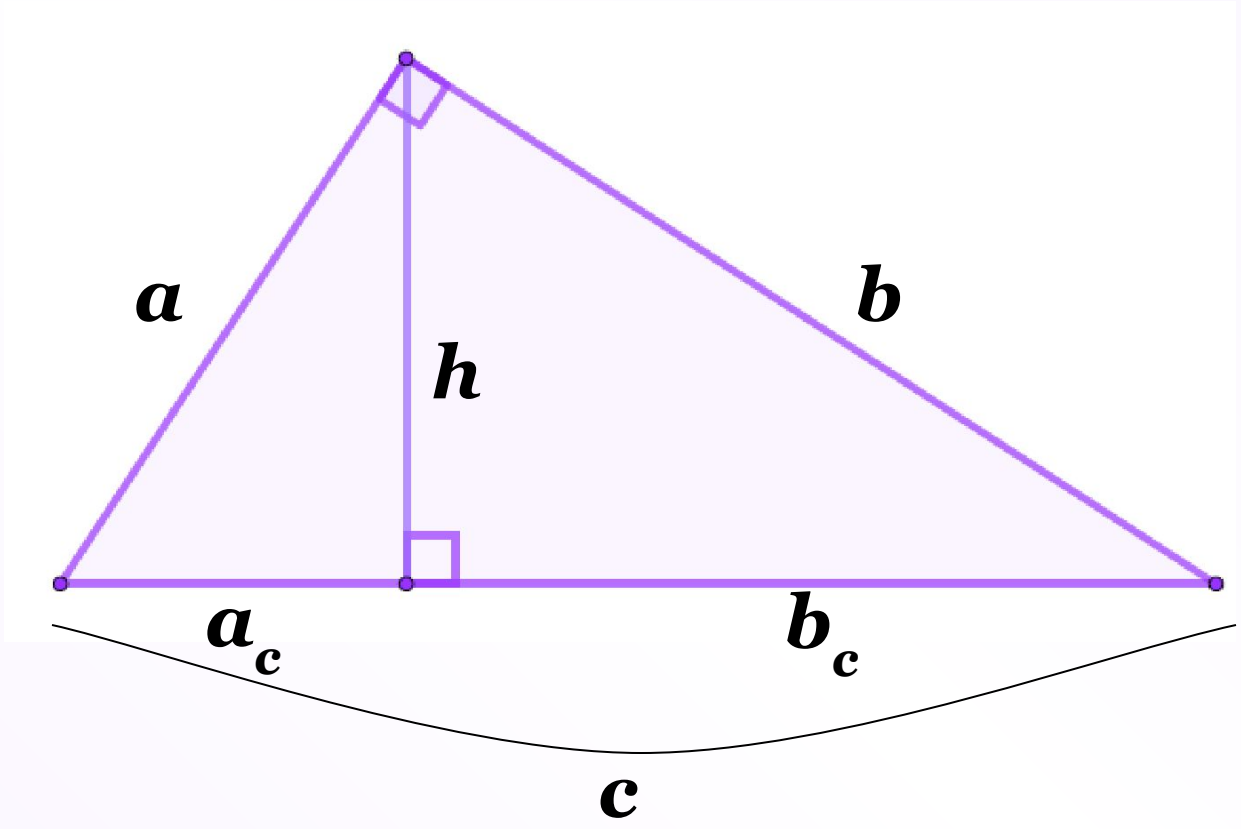
из ΔBDC:

$$\mathrm{tg}CBD = \frac{b_c}{h}$$

2) $$\frac{h}{a_c} = \frac{b_c}{h}$$

$$h^2 = a_c \cdot b_c$$

$$\boxed{h = \sqrt{a_c \cdot b_c}}$$

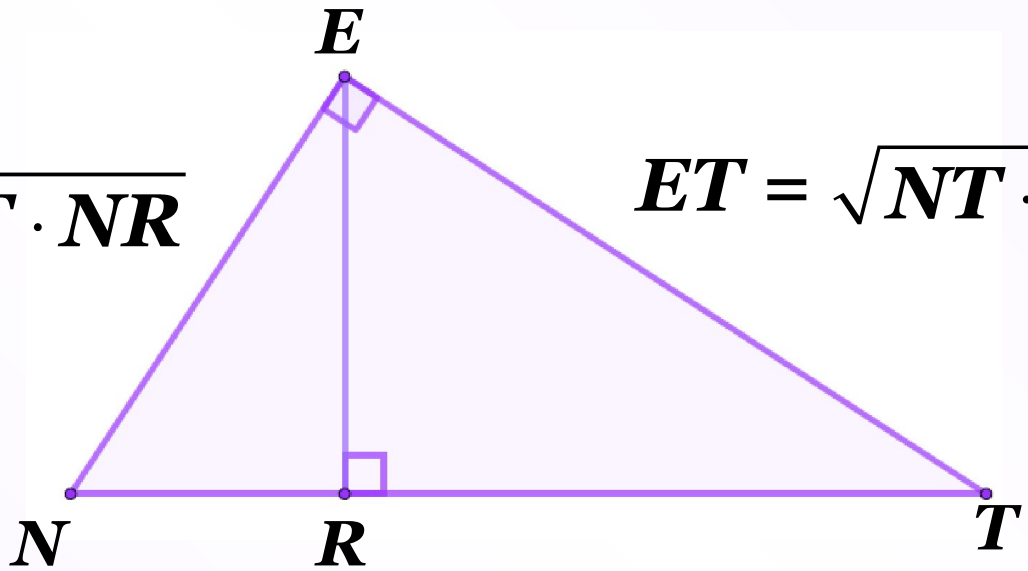


$$a = \sqrt{c \cdot a_c}$$

$$b = \sqrt{c \cdot b_c}$$

$$h = \sqrt{a_c \cdot b_c}$$

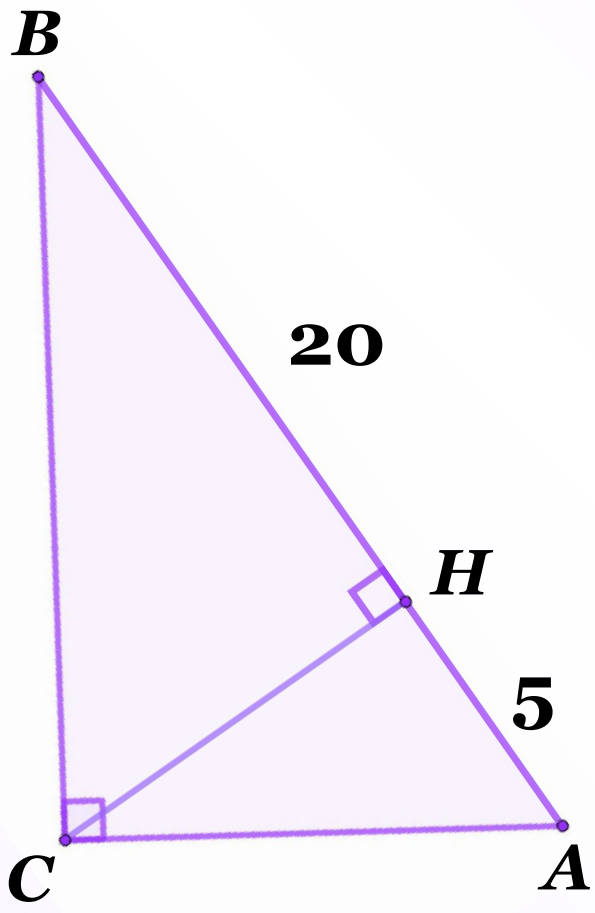
$$NE = \sqrt{NT \cdot NR}$$



$$ET = \sqrt{NT \cdot RT}$$

$$ER = \sqrt{NR \cdot RT}$$

Блиц – опрос. **Найдите *CH*.**

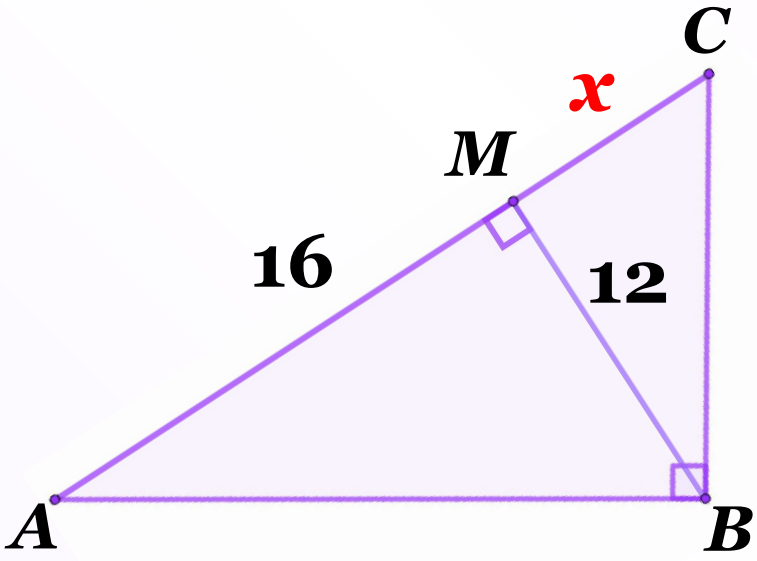


$$CH = \sqrt{AH \cdot BH}$$

$$CH = \sqrt{5 \cdot 20} = 10$$

Ответ: 10.

Блиц – опрос. **Найдите *MC*.**



$$BM = \sqrt{AM \cdot MC}$$

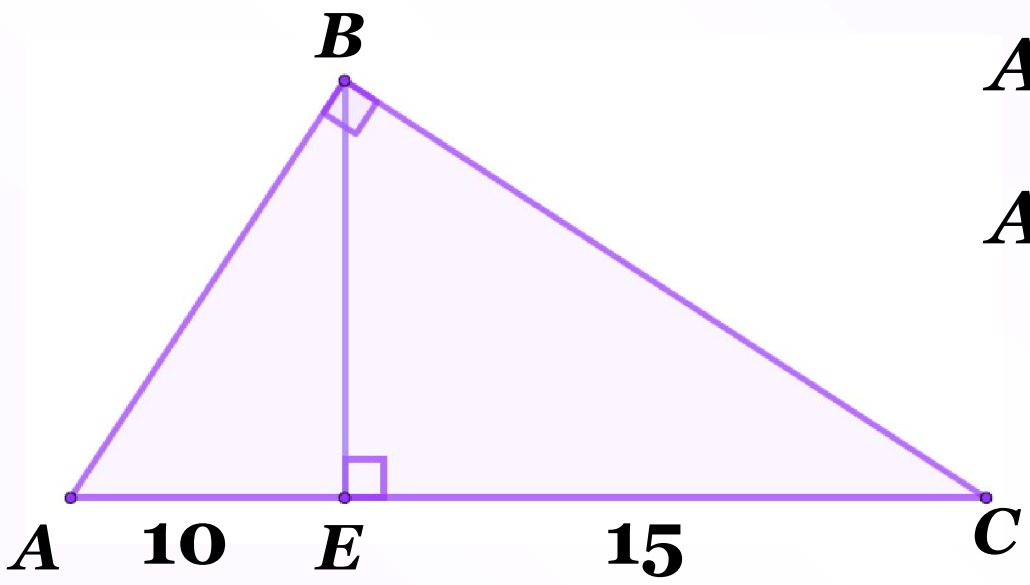
$$12^2 = \sqrt{16 \cdot x}^{\,2}$$

$$16x = 144$$

$$x = 9$$

Ответ: 9.

Блиц – опрос. **Найдите *AB*, *BC*.**



$$AB = \sqrt{AC \cdot AE}$$

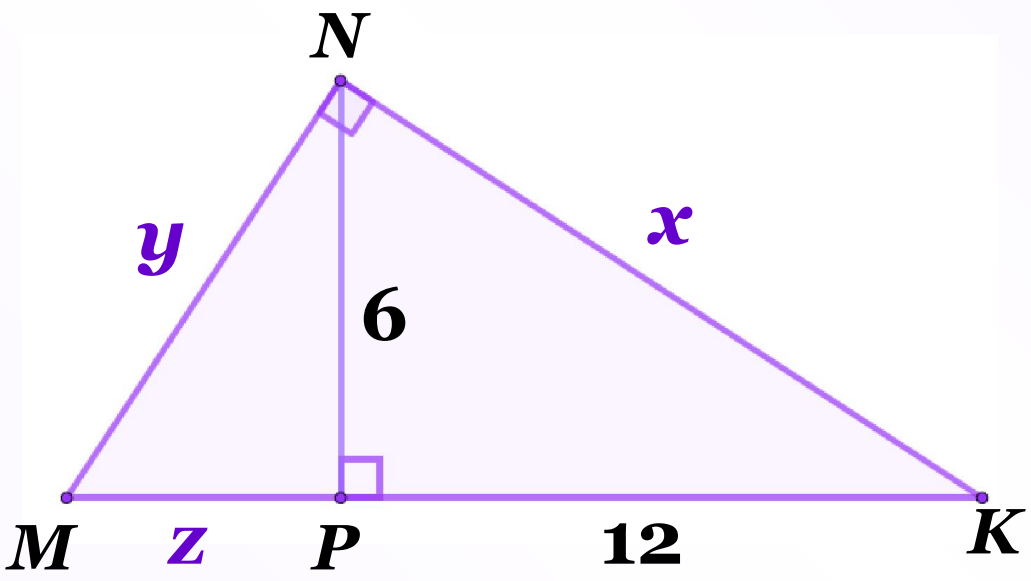
$$AB = \sqrt{25 \cdot 10} = 5\sqrt{10}$$

$$BC = \sqrt{AC \cdot CE}$$

$$BC = \sqrt{25 \cdot 15} = 5\sqrt{15}$$

Ответ: $5\sqrt{10}$, $5\sqrt{15}$.

Задача. **Найдите x, y, z.**



$$NP = \sqrt{MP \cdot PK}$$

$$6^2 = \sqrt{z \cdot 12}^{\,2}$$

$$12z = 36$$

$$z = 3$$

$$MN = \sqrt{MK \cdot MP}$$

$$y = \sqrt{15 \cdot 3}$$

$$y = \sqrt{3 \cdot 5 \cdot 3}$$

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

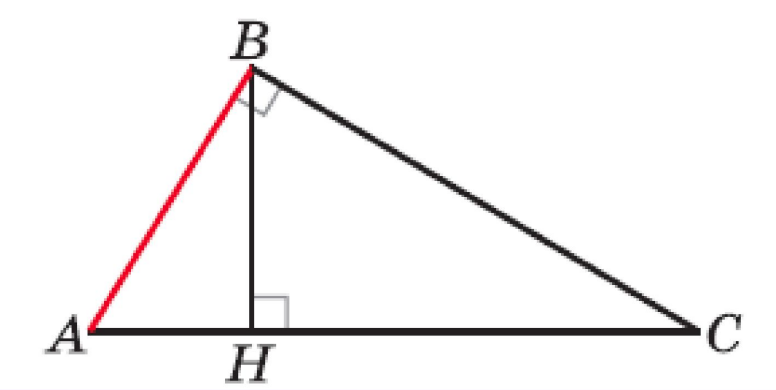
$$NK = \sqrt{MK \cdot PK}$$

$$x = \sqrt{15 \cdot 12}$$

$$y = \sqrt{3 \cdot 5 \cdot 3 \cdot 4}$$

$$y = 3 \cdot 2 \cdot \sqrt{5} = 6\sqrt{5}$$

Домашнее задание

Решите задачу:

Точка H является основанием высоты, проведенной из вершины прямого угла B треугольника ABC к гипотенузе AC (рис. 4). Найдите длину стороны AB, если $AH = 6$, $AC = 24$.