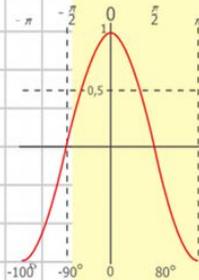
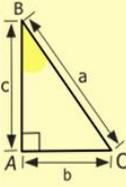
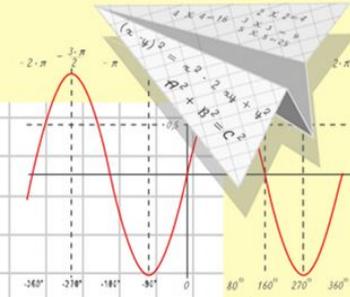
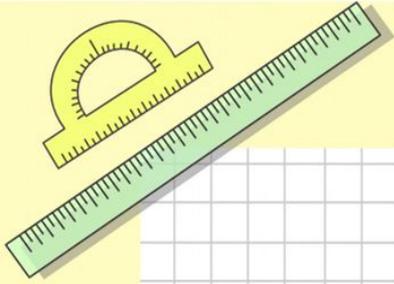


Математик

а

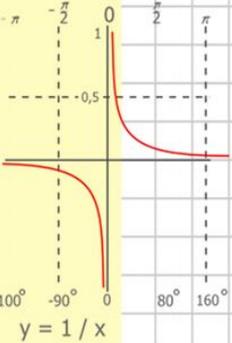
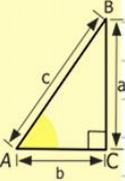
Кто не видит конечной цели,
очень удивляется, придя не
туда.

Марк Твен



$y = \cos x$

- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$



$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$

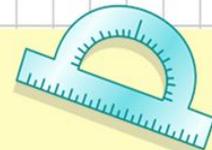


$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

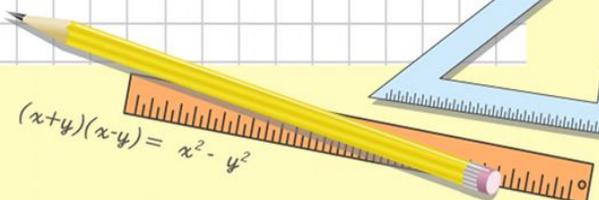
$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$



$\sin 90^\circ = 1$

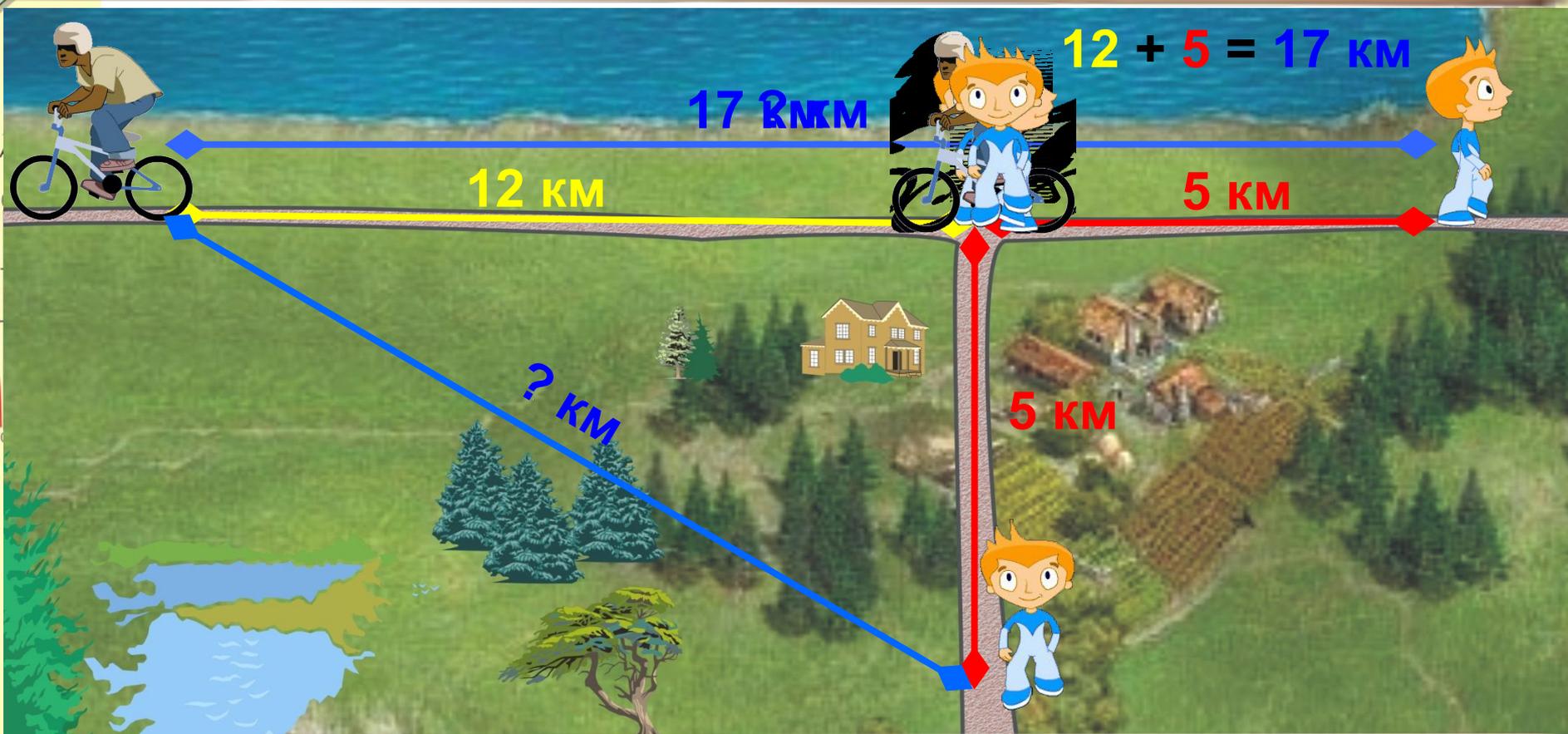


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \\ y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$



$(x+y)(x-y) = x^2 - y^2$

Пешеход и Велосипедист отправились одновременно из одного населённого пункта в противоположных направлениях. Велосипедист поехал на восток со скоростью 12 км/ч, а пешеход пошёл на запад со скоростью 5 км/ч. **Какое расстояние будет между ними через час?**

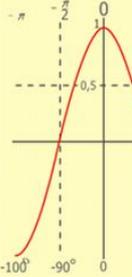
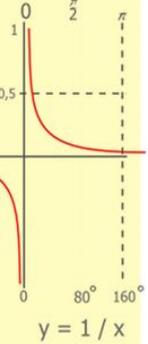
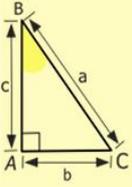
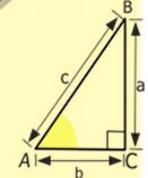
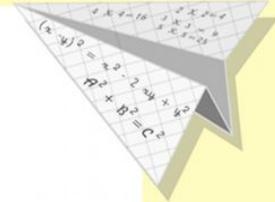
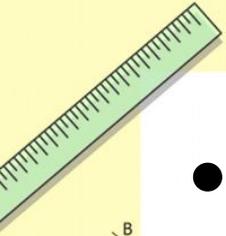


Велосипедист и пешеход отправились одновременно из одного населённого пункта в разных направлениях. Пешеход пошёл на юг со скоростью 5 км/ч, а велосипедист поехал на запад со скоростью 12 км/ч.

Какое расстояние будет между ними через час?

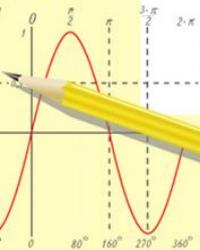
Цель урока

- Хочу узнать:
- Хочу научиться:



$$\begin{array}{r} 1 \\ 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$

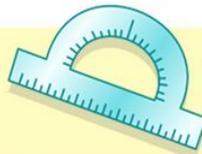
- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

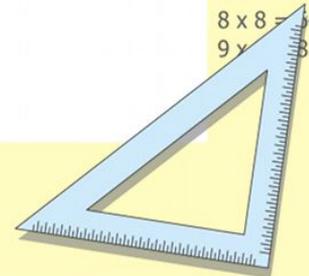
$$\sin 90^\circ = 1$$



$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$$(x+y)(x-y) = x^2 - y^2$$



Практическая работа

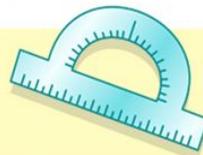
Заполните таблицу

Запишите закономерность:

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

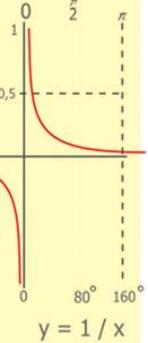
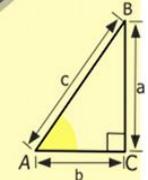
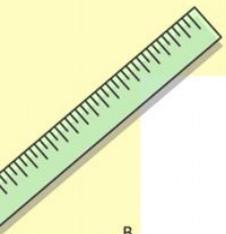
$$\sin 90^\circ = 1$$



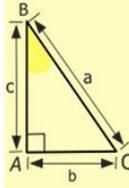
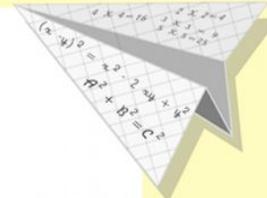
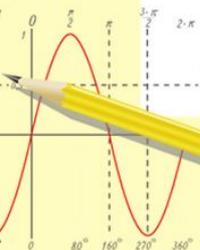
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ x = 70 \end{cases}$$

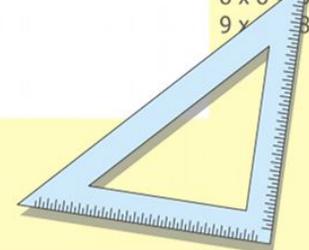
$$(x+y)(x-y) = x^2 - y^2$$



$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 2500 \\ + 210 \\ \hline 105000 \end{array}$$



$$\begin{array}{l} 2 \times 2 = 4 \\ 3 \times 3 = 9 \\ 4 \times 4 = 16 \\ 5 \times 5 = 25 \\ 6 \times 6 = 36 \\ 7 \times 7 = 49 \\ 8 \times 8 = 64 \\ 9 \times 9 = 81 \end{array}$$



Задача:

Найдите гипотенузу прямоугольного треугольника по данным катетам a и b .

$$a = 6, b = 8, c = ?$$

Найдите катет прямоугольного треугольника по известному катету и гипотенузе.

$$a = 7, c = 9, b = ?$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

$$\sin 90^\circ = 1$$

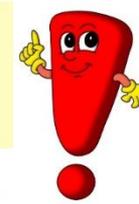
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$$(x+y)(x-y) = x^2 - y^2$$

$$\begin{aligned} 2 \times 2 &= 4 \\ 3 \times 3 &= 9 \\ 4 \times 4 &= 16 \\ 5 \times 5 &= 25 \\ 6 \times 6 &= 36 \\ 7 \times 7 &= 49 \\ 8 \times 8 &= 64 \\ 9 \times 9 &= 81 \end{aligned}$$

Обрати внимание



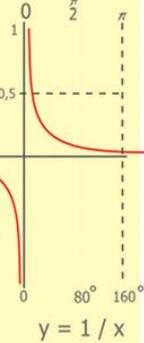
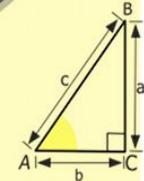
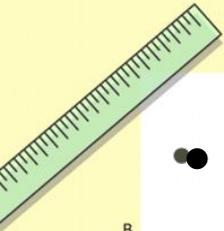
- Если находим длину гипотенузы c , то выполняем сложение квадратов длин катетов a и b и определяем квадратный корень: $c^2 = a^2 + b^2$

$$c = \sqrt{a^2 + b^2}$$

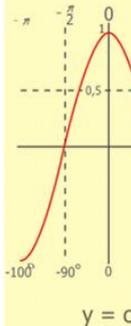
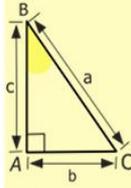
- Если находим длину одного катета, то выполняем вычитание длины квадрата другого катета из квадрата длины гипотенузы и определяем квадратный корень:

$$a^2 = c^2 - b^2$$

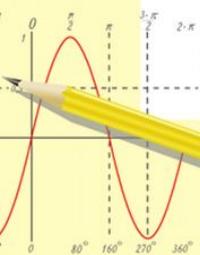
$$a = \sqrt{c^2 - b^2}$$



$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 2500 \\ + 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$



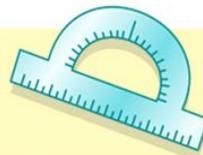
- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

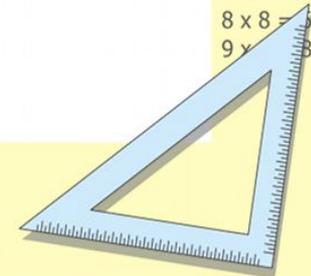
$$\sin 90^\circ = 1$$



$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$$(x+y)(x-y) = x^2 - y^2$$





- 25
- 2
- 8
- 12
- 2
- 13
- 3
- 5
- 17
- 3^3
- 3
- 6
- 8
- 12
- 3

$a=3, b=4, c=?$

$a=7, b=24, c=?$

$a=8, b=15, c=?$

$a=6, b=? , c=10$

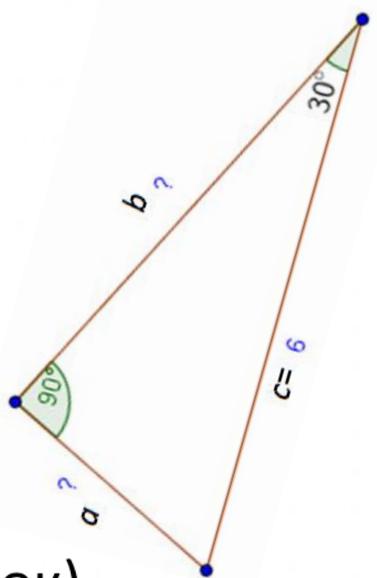
$a=5, b=? , c=\sqrt{61}$

$a=? , b=16, c=20$

$a=12, b=5, c=?$

$a=3b, b=? , c=2\sqrt{10}$

$a=? , b=? , c=6$ (рисунок)



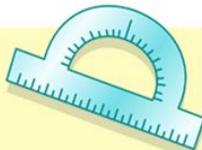
- П** 5
- Р** 12
- Т** 25
- М** 13
- И** 17
- е** 2
- о** 8
- а** 3
- Г** 6
- ф** $3\sqrt{3}$

Решите задачи, установите соответствие и запишите тему урока.

$$\frac{a}{A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

$\sin 90^\circ = 1$



$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

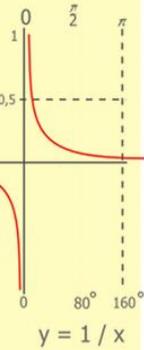
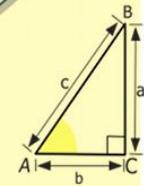
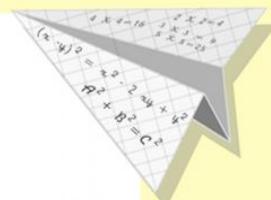
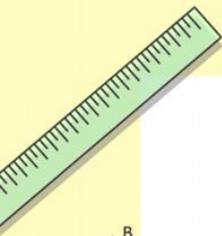
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$

$x = 70$

$$(x+y)(x-y) = x^2 - y^2$$

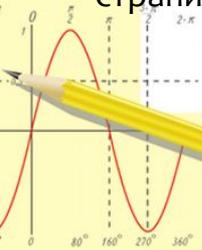


- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$
- $9 \times 9 = 81$



$y = 1/x$

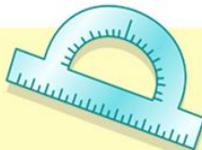
$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 2100 \\ + 8400 \\ \hline 105000 \end{array}$$



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

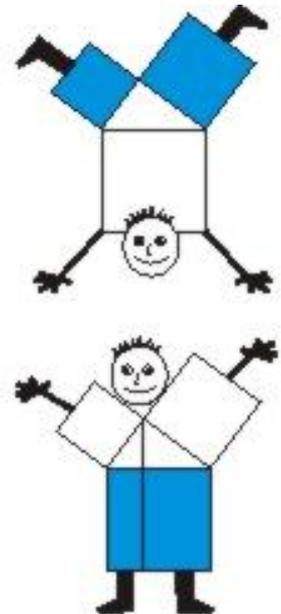
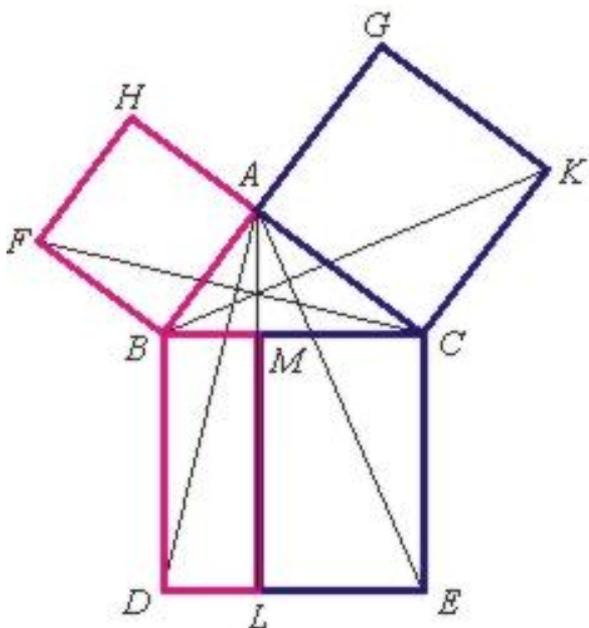
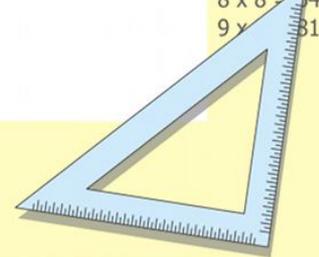
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

$\sin 90^\circ = 1$



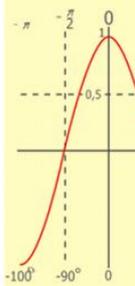
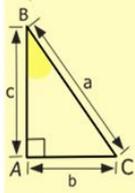
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases} \quad \begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$$(x+y)(x-y) = x^2 - y^2$$



“Пифагоровы штаны”

Пифагоровы штаны во все стороны равны, что бы это доказать надо снять и показать



$y = \cos$

- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81

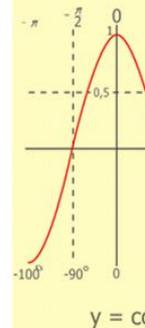
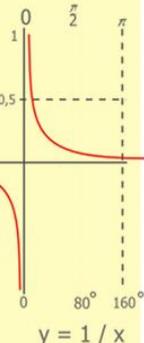
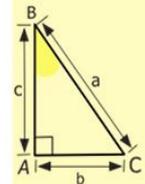
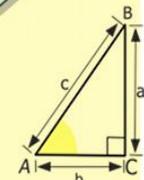
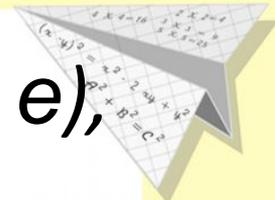
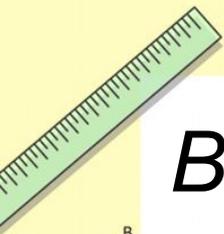
С помощью теоремы можно вычислить длину стропила для двускатной крыши. Определить, какой высоты вышка мобильной связи нужна, чтобы сигнал достигал определенного населенного пункта. И даже устойчиво установить новогоднюю елку на городской площади. Как видите, эта теорема живет не только на страницах учебников, но и часто бывает полезна в реальной жизни.

Домашнее задание

Вопрос 9 стр. 133, № 483 (в), 484 (б, г, е),
486(а)

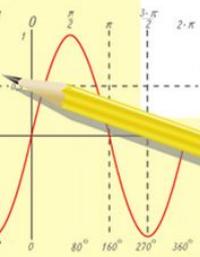
Презентации на тему:

1. Пифагор
2. Теорема Пифагора
3. Школа Пифагора



$$\begin{array}{r} 1 \\ 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$

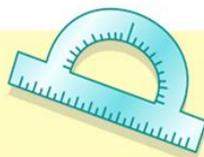
$$\begin{array}{l} 2 \times 2 = 4 \\ 3 \times 3 = 9 \\ 4 \times 4 = 16 \\ 5 \times 5 = 25 \\ 6 \times 6 = 36 \\ 7 \times 7 = 49 \\ 8 \times 8 = 64 \\ 9 \times 9 = 81 \end{array}$$



$$\frac{a}{A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

$$\sin 90^\circ = 1$$

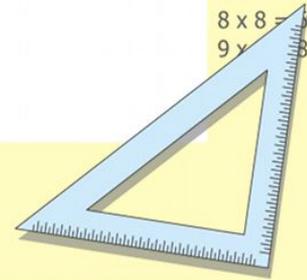


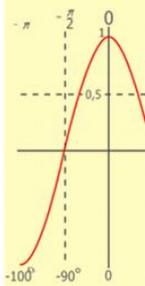
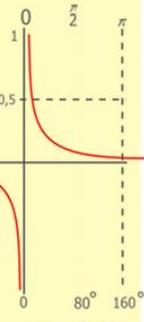
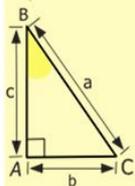
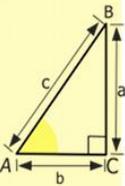
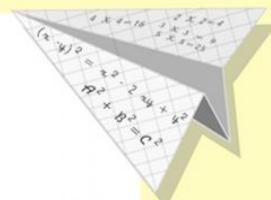
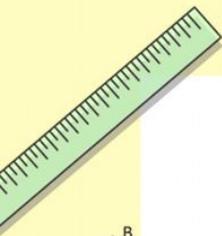
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$

$$x = 70$$

$$(x+y)(x-y) = x^2 - y^2$$



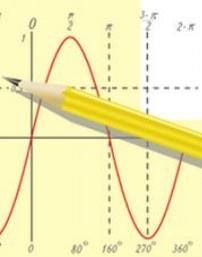


$y = 1 / x$

$y = \cos$

$$\begin{array}{r} \frac{1}{2} 500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$

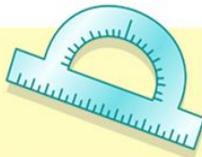
- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$
- $9 \times 9 = 81$



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

$\sin 90^\circ = 1$



$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

$(x+y)(x-y) = x^2 - y^2$

