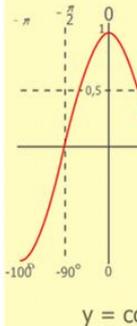
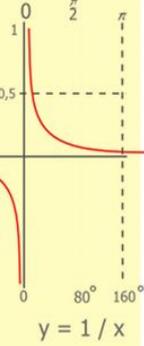
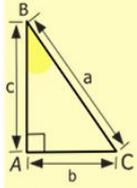
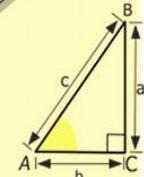
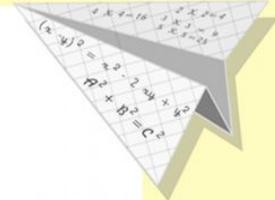
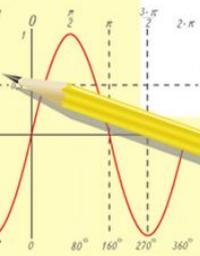


Ну-ка проверь дружок
 Ты готов начать урок?
 Всё ль на месте, всё ль в
 порядке,
 Ручка, книжка и тетрадка?
 Все ли правильно сидят?
 Все ль внимательно глядят?
 Каждый хочет получать
 Только лишь оценку «5».
 Тут затеи и задачи,
 Игры, шутки, всё для вас!
 Пожелаем же удачи –
 За работу, в добрый час!



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

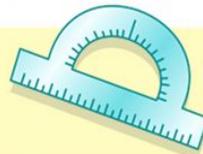
- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81



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

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

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

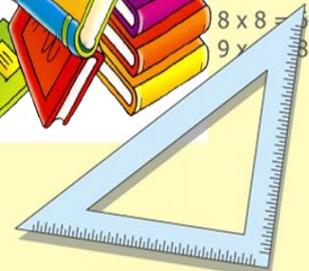


$$x = 25y + 45$$

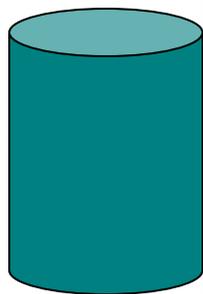
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$

$$x = 70$$

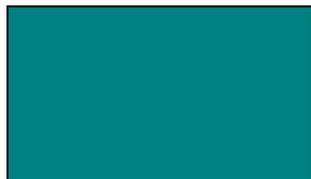
$$(x+y)(x-y) = x^2 - y^2$$



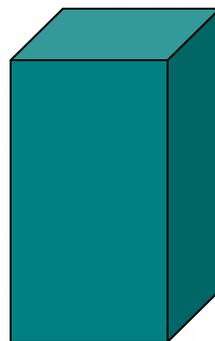
Под каким номером нарисован параллелепипед?



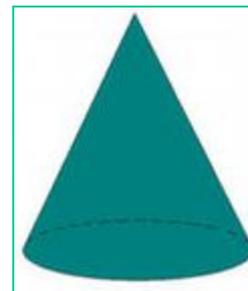
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3)



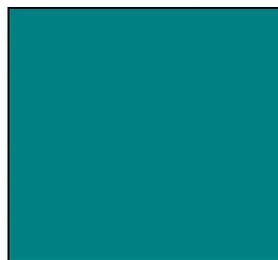
4)



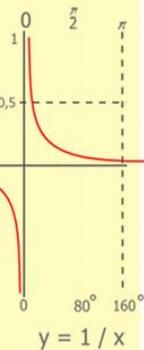
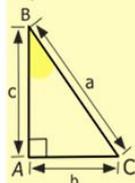
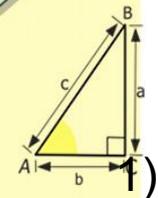
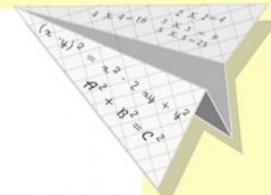
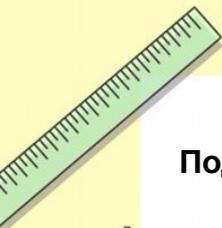
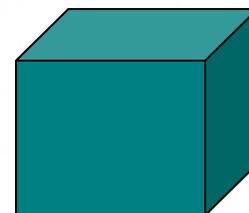
5)



6)

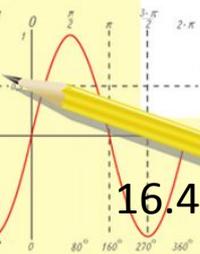


7)



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

$2 \times 2 = 4$
 $3 \times 3 = 9$
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16.4.13

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

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

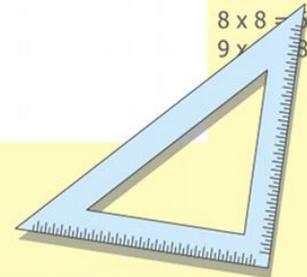
$$\sin 90^\circ = 1$$



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

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

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



1) Любой прямоугольный параллелепипед состоит из
граней. Их у него:

а) 12

б) 8

в) 6

г) 10

2) У каждого параллелепипеда есть рёбра. Это:

а) Прямоугольники

б) Прямые

в) Треугольник

г) Отрезки

3) У куба все рёбра:

а) Попарно равны

б) Разные

в) Равны

г) Другой ответ

4) У параллелепипеда противоположные грани:

а) Равны

б) Квадраты

в) Разные

г) Другой ответ

5) Площадь поверхности параллелепипеда можно
вычислить по формуле:

а) $S=4 \times (a+b+c)$

б) $S=2 \times (a \times b + b \times c + a \times c)$

в) $S=abc$

г) $S=6abc$

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

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

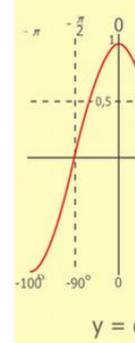
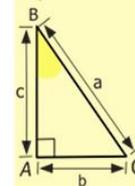
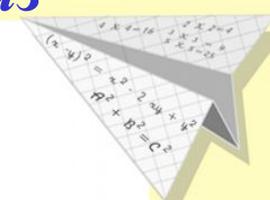
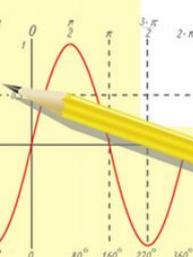
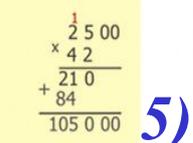
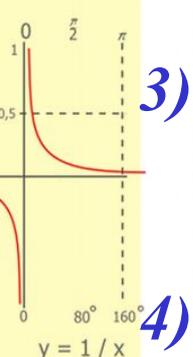
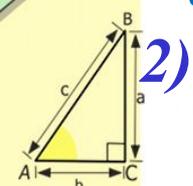
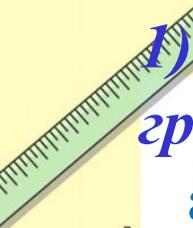
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$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

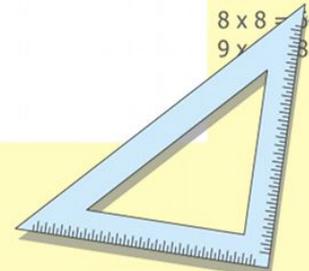
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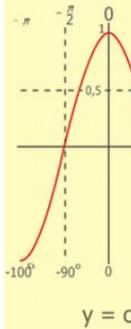
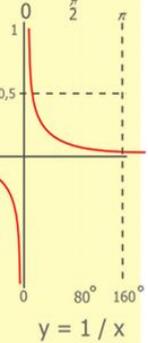
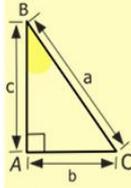
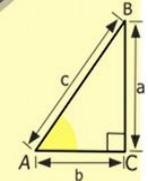
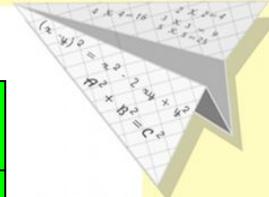
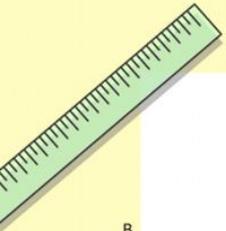


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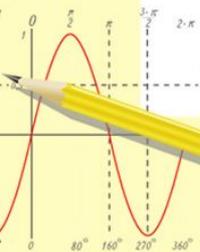
КЛЮЧ К ТЕСТУ

1	2	3	4	5
В	Г	В	а	б



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

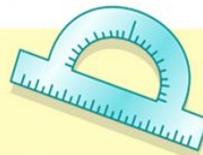
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$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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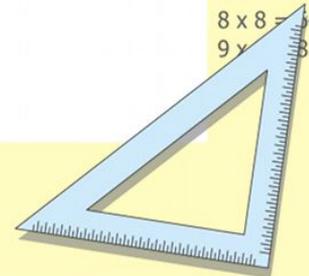
$$\sin 90^\circ = 1$$



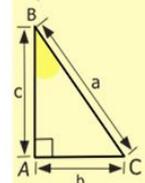
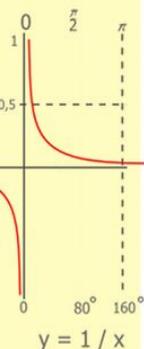
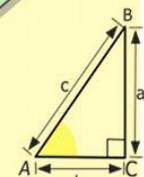
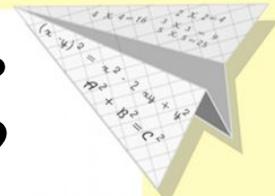
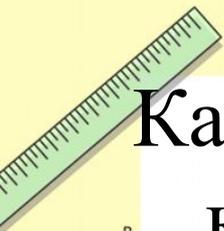
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

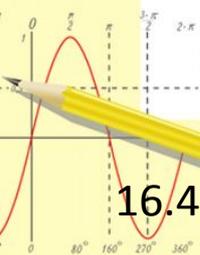


Как знания математики помогают создать комфортные условия для жизни рыбок?



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

- $2 \times 2 = 4$
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- $8 \times 8 = 64$
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16.4.13

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

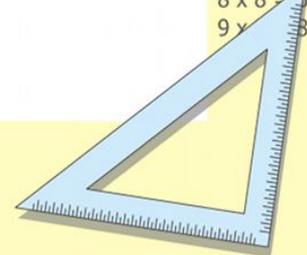
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$$\sin 90^\circ = 1$$



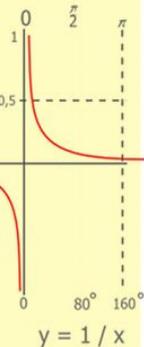
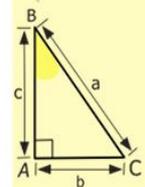
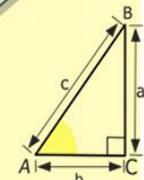
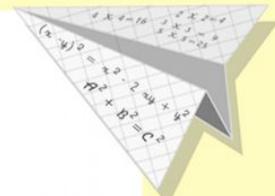
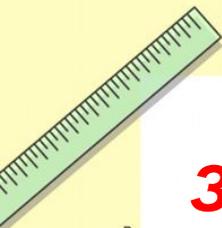
$$\begin{cases} y = \sin 90^\circ \\ x = 25y + 45 \\ y = 1 \\ x = 25 + 45 \\ x = 70 \end{cases}$$

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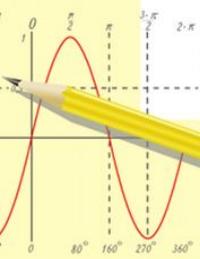
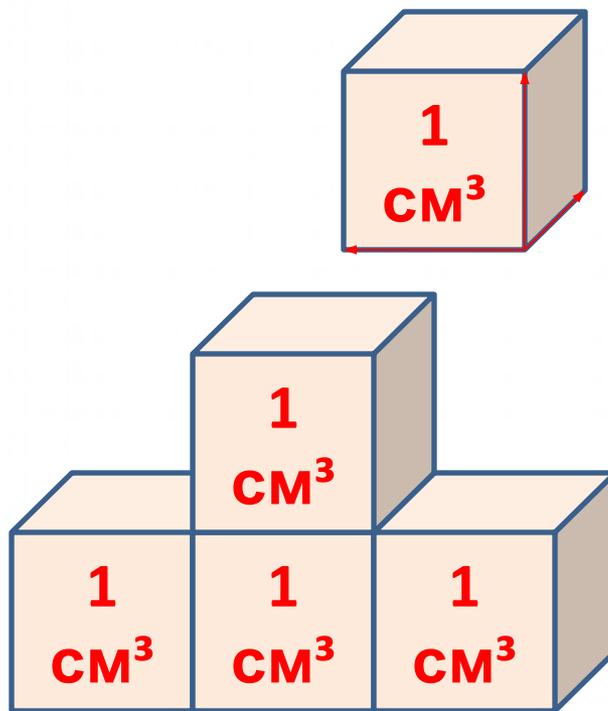
ЕДИНИЦЫ ИЗМЕРЕНИЯ ОБЪЁМА

За единицу измерения объема принимают объем единичного куба.



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

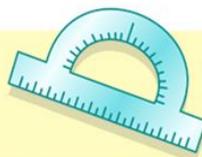
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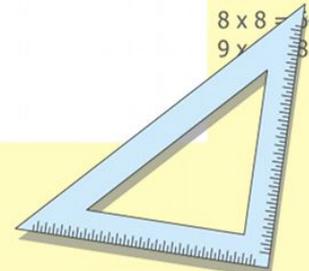
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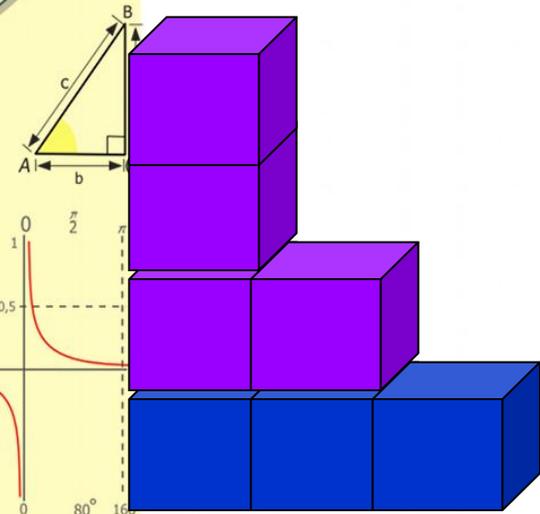
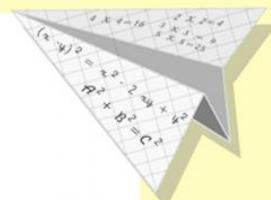
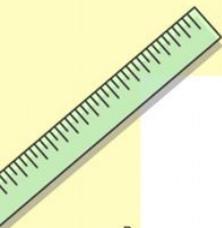
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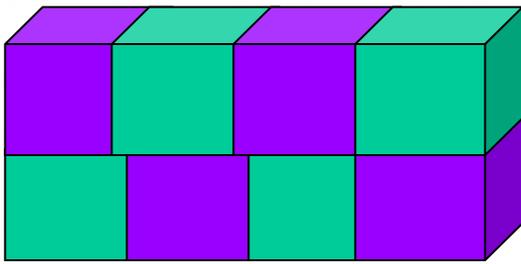


Вычислить объемы фигур.

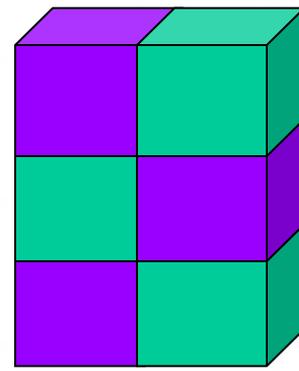
1 см³



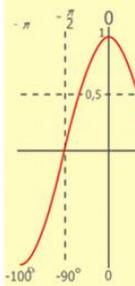
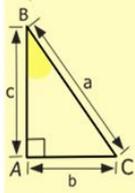
1



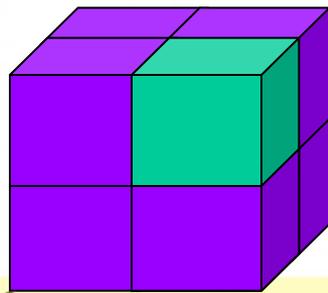
2



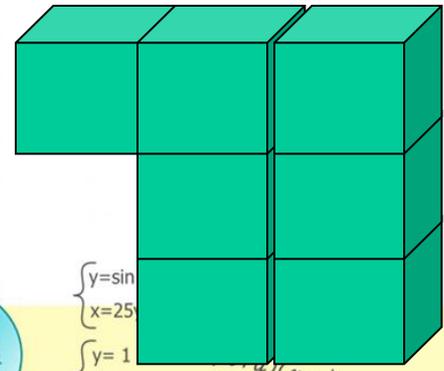
3



$$\begin{array}{r} 12500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$

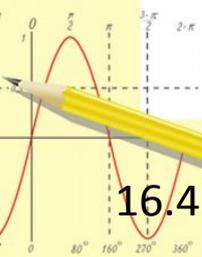


$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$



5

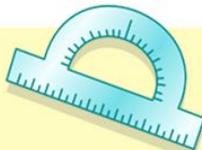
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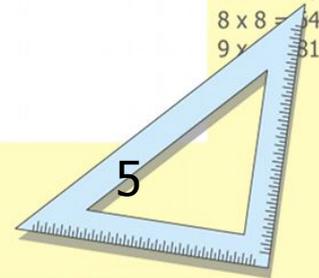
16.4.13

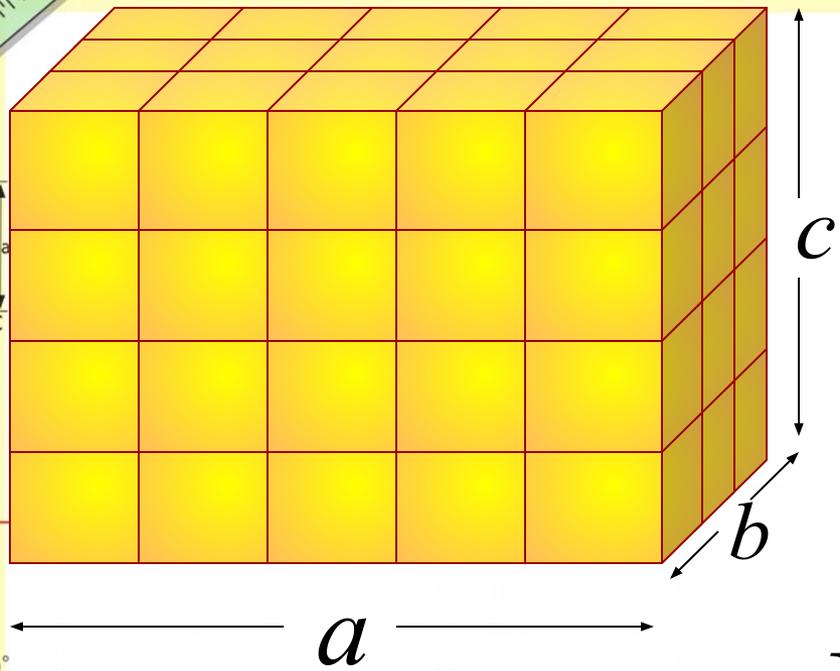
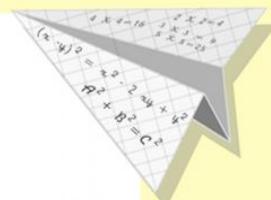
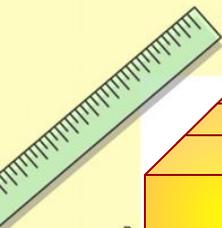
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

sin 90° = 1



$$\begin{cases} y = \sin x \\ x = 25 \\ y = 1 \\ x = 25 + 45 \end{cases} \quad y(x-y) = x^2 - y^2$$



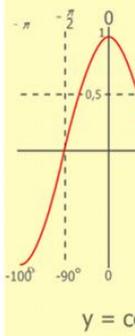
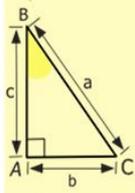
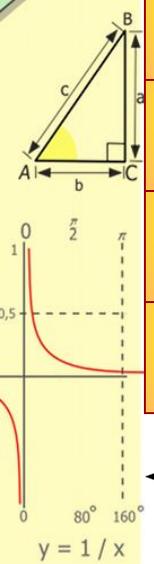


V – объем

$$V = a \cdot b \cdot c$$

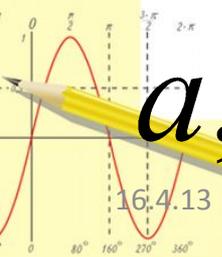
$$V = abc$$

a, b, c – измерения



$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 2100 \\ + 840 \\ \hline 105000 \end{array}$$

- 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

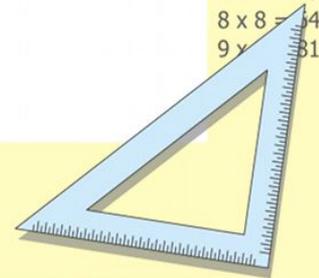


$$\sin 90^\circ = 1$$

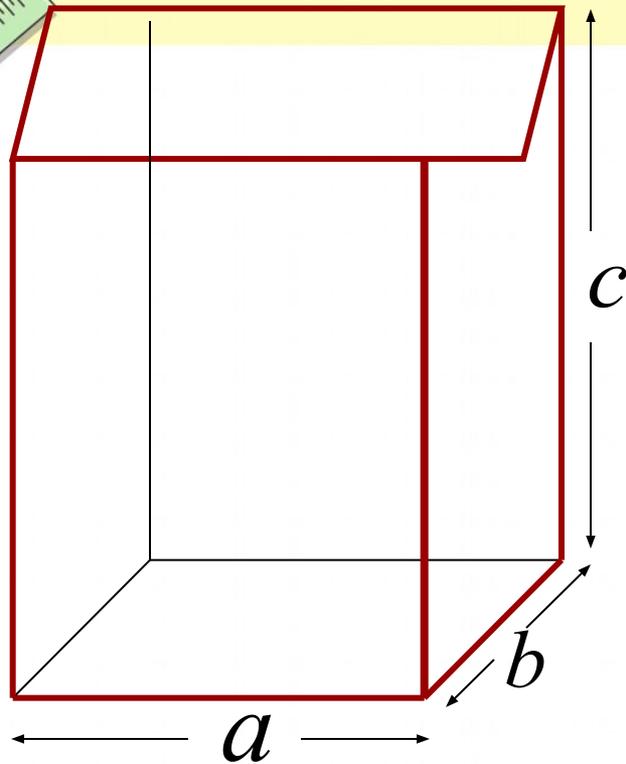


$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases} \quad \frac{x}{70}$$

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



Объем прямоугольного параллелепипеда



V – объем

$$V = abc$$

a – длина
 b – ширина
 c – высота

– измерения

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

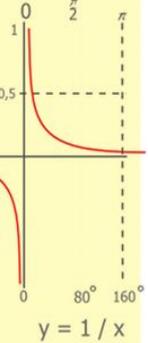
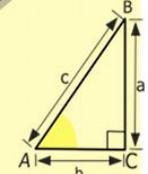
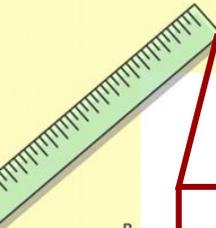
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

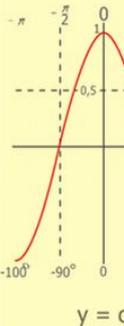
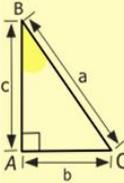
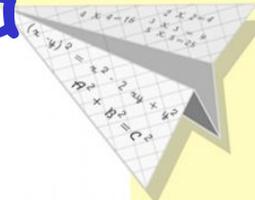
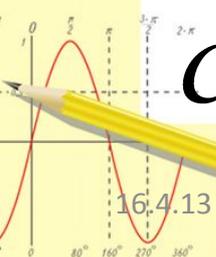
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

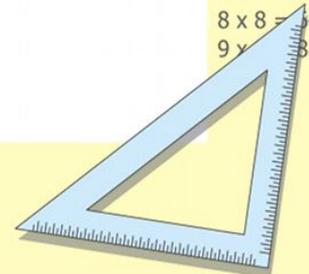
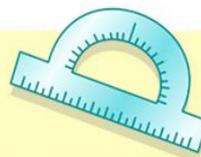
$$(x+y)(x-y) = x^2 - y^2$$



$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 2500 \\ + 12500 \\ \hline 25000 \end{array}$$



- 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



Объем куба

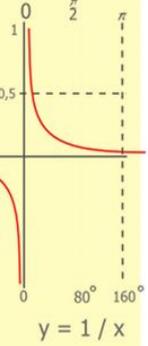
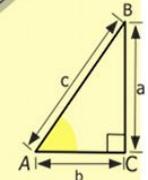
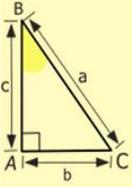
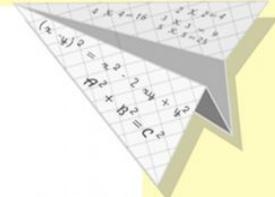
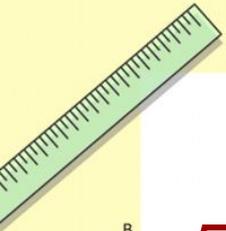
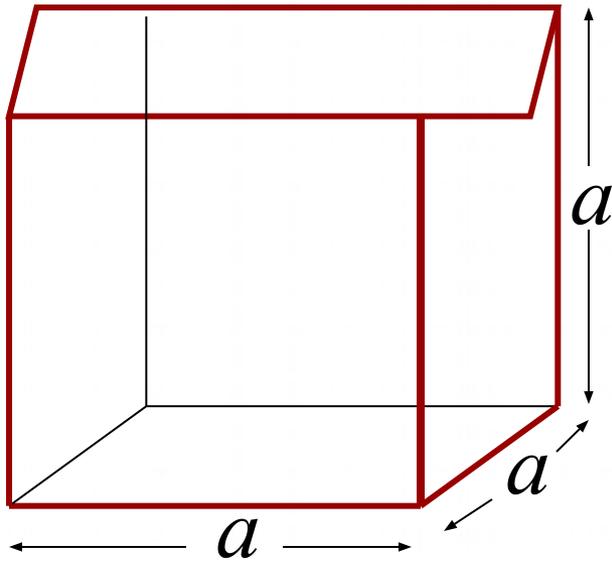
V – объем

$$V = abc$$

$$a = b = c$$

$$V = a \cdot a \cdot a = ?$$

$$V = a^3$$



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

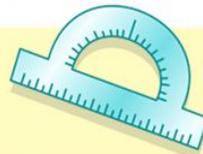
- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$
- $9 \times 9 = 81$



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

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

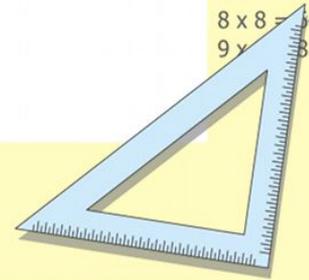
$$\sin 90^\circ = 1$$



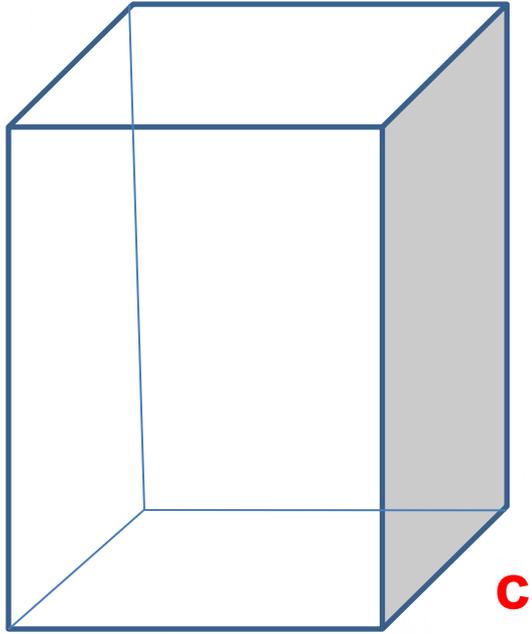
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

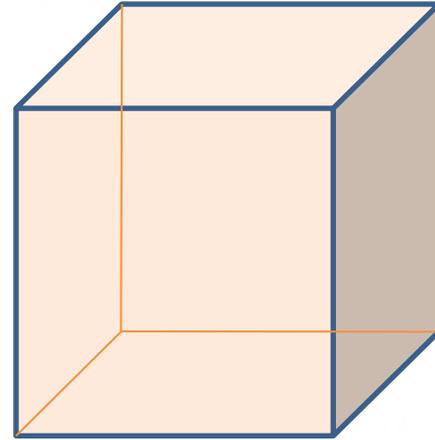


ФОРМУЛЫ ОБЪЁМОВ ПАРАЛЛЕЛЕПИПЕДА И КУБА



V

$$V=abc$$



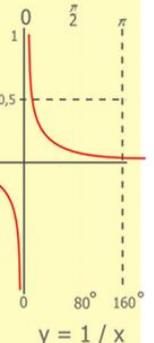
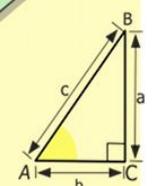
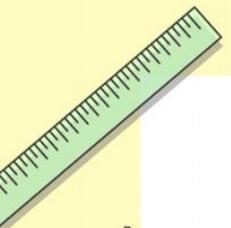
a

a

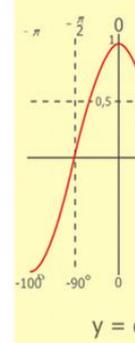
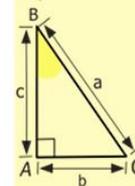
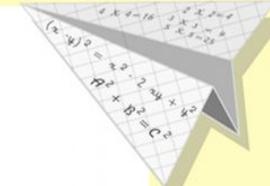
a

$$V=a^3$$

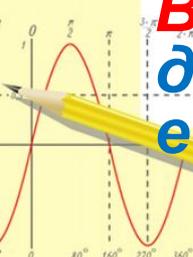
Внимание! При вычислениях все измерения должны быть выражены в одинаковых единицах.



$$\begin{array}{r} 1\ 5\ 00 \\ \times 42 \\ \hline 21\ 0 \\ + 84 \\ \hline 105\ 0\ 00 \end{array}$$



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



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

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

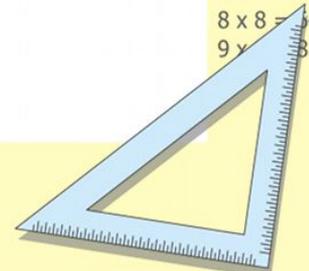
$$\sin 90^\circ = 1$$



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

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

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



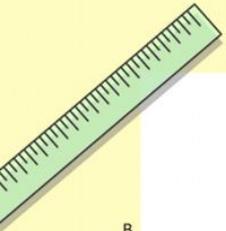


Встаньте

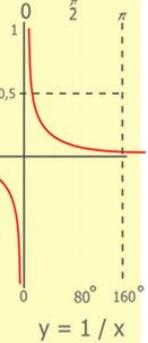
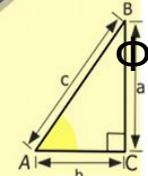
Вспомните теплое летнее
солнышко. Потянитесь к нему
Наклонитесь вперед, назад,
вправо, влево

Потянитесь

Вы бодры и полны сил
Продолжим работу



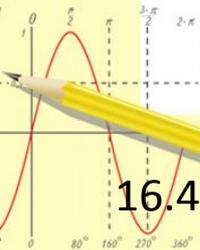
Физкультминутка



$$\begin{array}{r} \frac{1}{2} 500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$



- 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



16.4.13

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

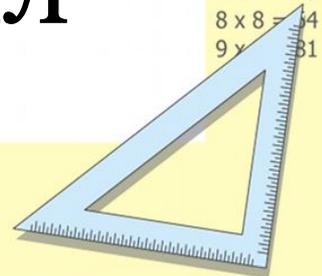
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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



$$\begin{cases} y = \sin x \\ x = 25y + 4 \end{cases}$$
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$
$$\frac{x}{70}$$

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



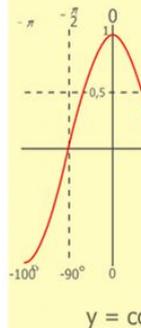
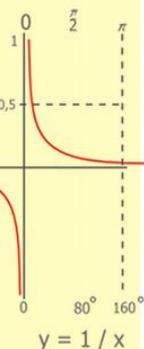
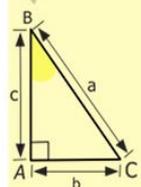
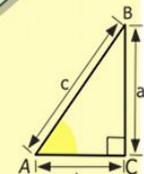
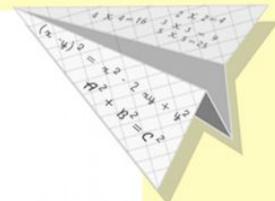
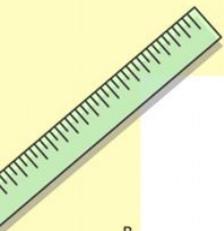
Запомни!

Для вычисления объема
прямоугольного параллелепипеда:

$$V = a \cdot b \cdot c$$

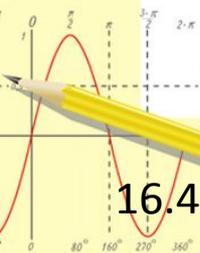
Для вычисления объема куба:

$$V = a^3$$



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

- 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



16.4.13

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

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

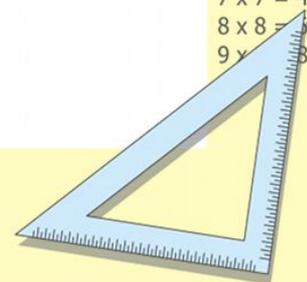
$$\sin 90^\circ = 1$$

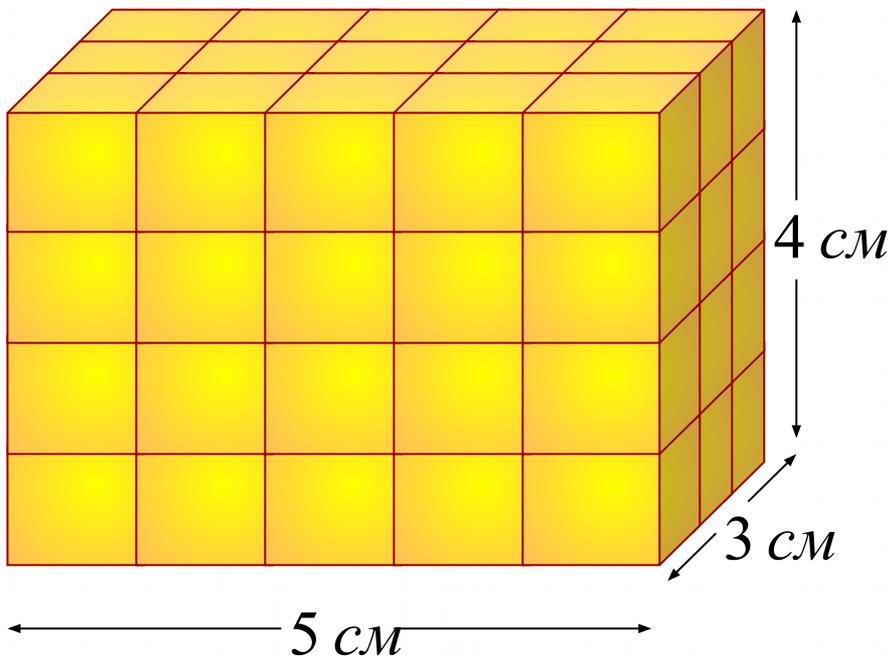


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

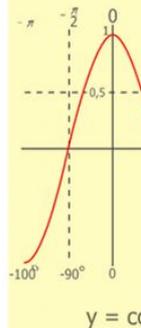
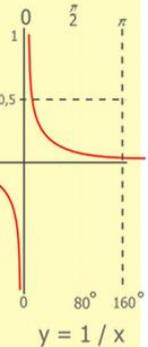
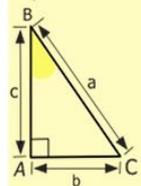
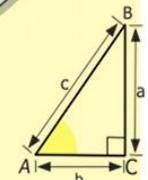
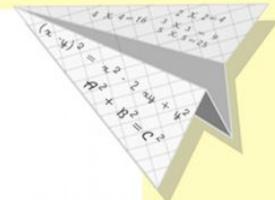
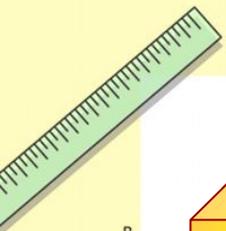
$$(x+y)(x-y) = x^2 - y^2$$





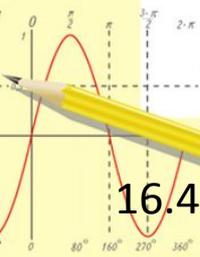
V – объем

$$V = 5\text{ см} \cdot 3\text{ см} \cdot 4\text{ см} = 60\text{ см}^3$$



$$\begin{array}{r} \frac{1}{2} 500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$

- 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

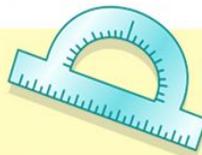


16.4.13

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

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

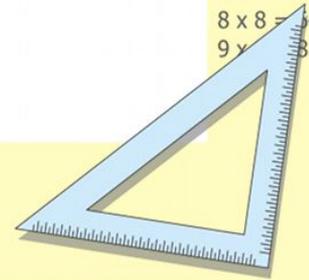
$$\sin 90^\circ = 1$$



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

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

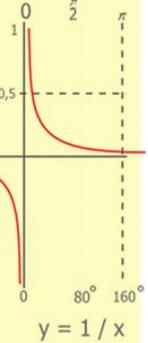
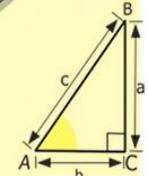
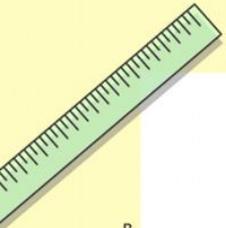
$$(x+y)(x-y) = x^2 - y^2$$



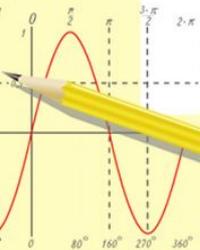
ЕДИНИЦЫ ОБЪЁМА

Объемы единичных кубов получают названия в зависимости от выбранной единицы длины ребра:

- кубический миллиметр (1 мм³)
- кубический сантиметр (1 см³)
- кубический дециметр (1 дм³)
- кубический метр (1 м³)
- кубический километр (1 км³)
- 1 дм³ = 1 л (литр)**



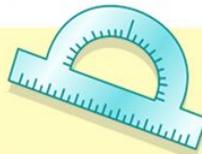
$$\begin{array}{r} 1 \\ 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$



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

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

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

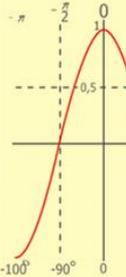
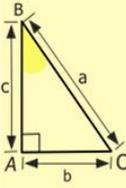
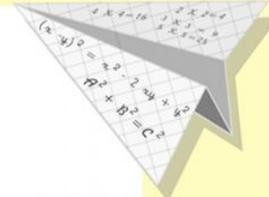


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

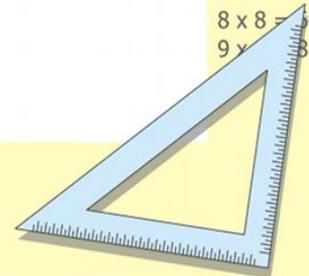
$$x = 70$$

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



$$y = \cos$$

- 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



«Светофор настроения»



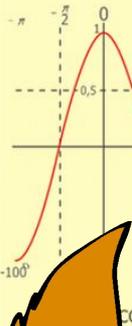
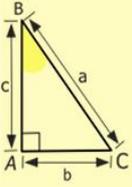
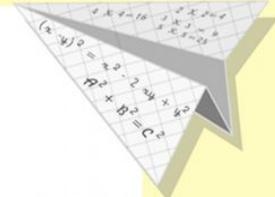
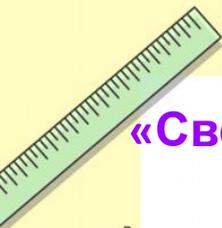
Я доволен своей работой на уроке.



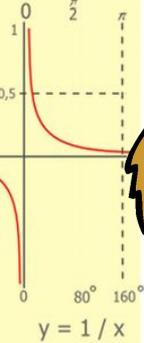
На уроке я работал неплохо.



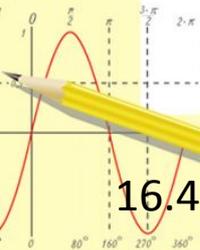
На уроке мне было трудно.



- 16
- = 25
- 6 = 36
- x 7 = 49
- 8 = 64
- 9 = 81



$$\begin{array}{r} 1\ 2\ 5\ 00 \\ \times 4\ 2 \\ \hline 2\ 1\ 0 \\ + 8\ 4\ 0 \\ \hline 10\ 5\ 0\ 00 \end{array}$$



16.4.13

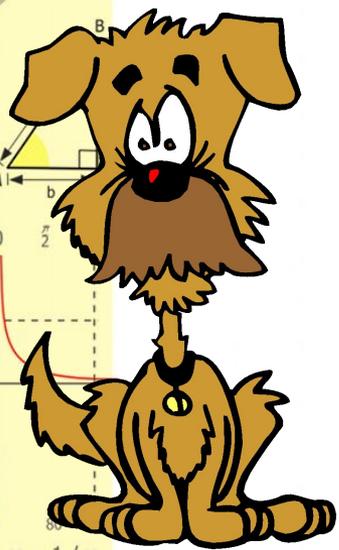
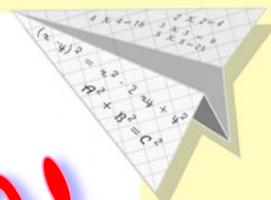
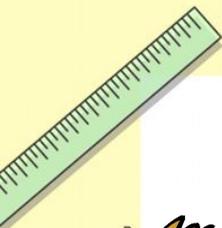
$$\frac{a}{A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$



$$\begin{cases} x + y = 9 \\ x = 25y + 45 \end{cases}$$

$$\frac{x = 25 + 45}{x = 70}$$

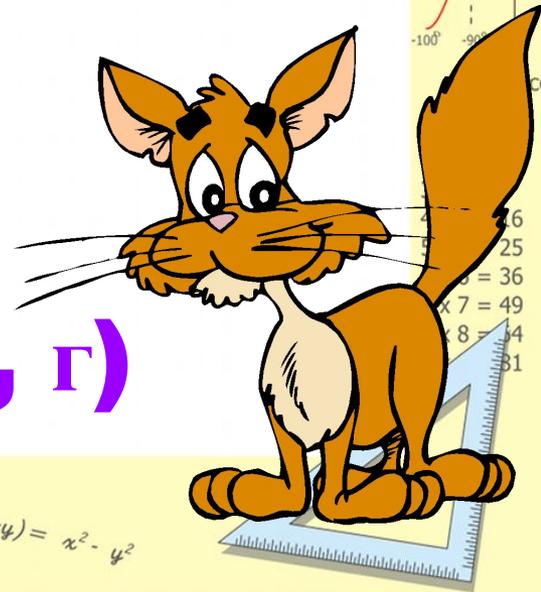
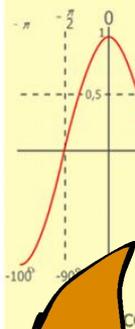
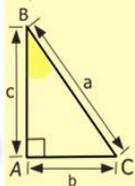
$$(x+y)(x-y) = x^2 - y^2$$



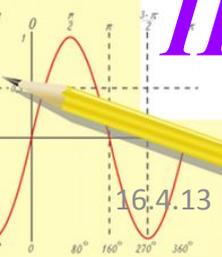
$y = 1/x$

$$\begin{array}{r} 12500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$

Домашнее задание!



П.8.4 № 1145;1146 (б, в, г)

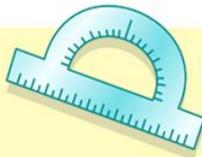


16.4.13

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

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

$\sin 90^\circ = 1$



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

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

$x = 70$

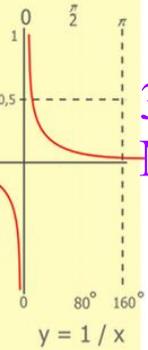
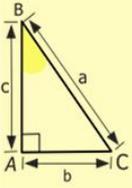
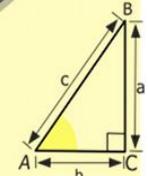
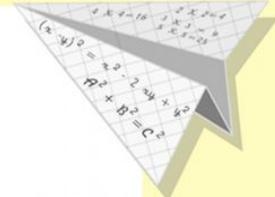
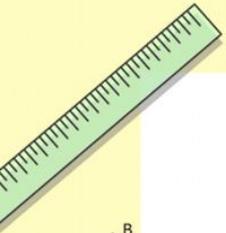
$$(x+y)(x-y) = x^2 - y^2$$

РЕСУРСЫ

1. <http://www.zjammie.nl/plaatjes-school2.htm>

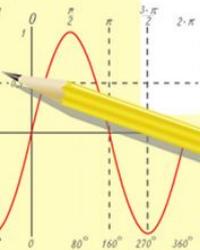
2. <http://office.microsoft.com/ru>

3. Идея презентации. Васильевой В.М., учитель математики, МАОУСОШ №1, г.Старая Русса Новгородской области



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

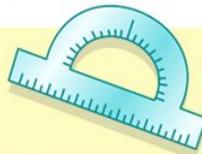
$$\begin{array}{l} 2 \times 2 = 4 \\ 3 \times 3 = 9 \\ 4 \times 4 = 16 \\ 5 \times 5 = 25 \\ 6 \times 6 = 36 \\ 7 \times 7 = 49 \\ 8 \times 8 = 64 \\ 9 \times 9 = 81 \end{array}$$



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

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

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



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

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

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

