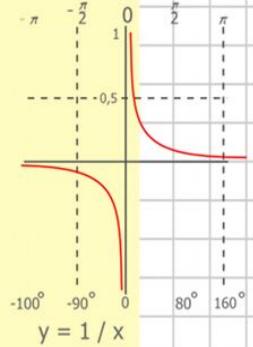
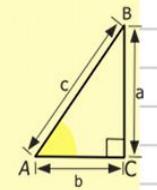
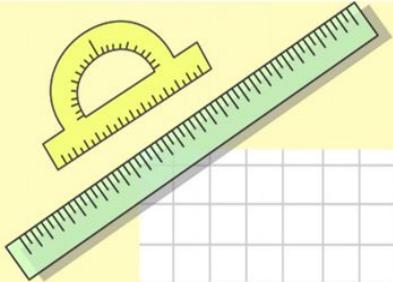


Математик а



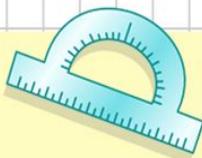
$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$



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

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

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

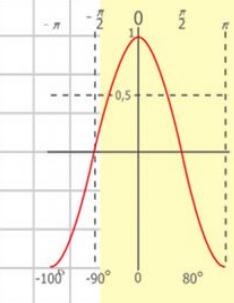
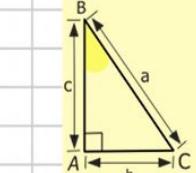
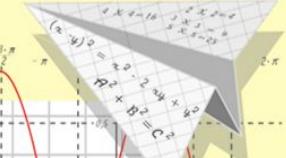


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$\frac{x = 70}{x = 70}$$

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



$$y = \cos x$$

$$2 \times 2 = 4$$

$$3 \times 3 = 9$$

$$4 \times 4 = 16$$

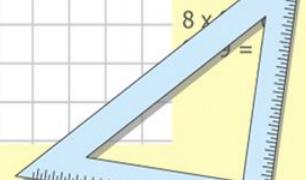
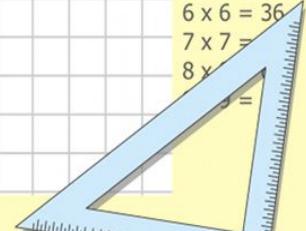
$$5 \times 5 = 25$$

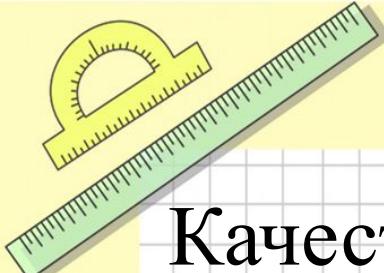
$$6 \times 6 = 36$$

$$7 \times 7 =$$

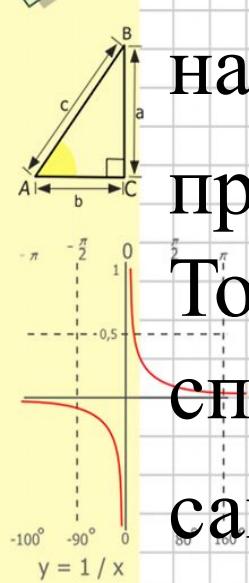
$$8 \times$$

$$=$$





Качество математического образования напрямую связано с уровнем профессиональной подготовки учителя. Только саморазвивающийся учитель способен воспитать саморазвивающегося ученика и только конкурентоспособный учитель способен вырастить конкурентоспособную личность.



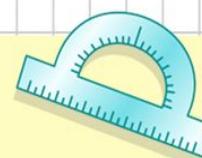
$$\begin{array}{r}
 & 1 \\
 & 2 \ 5 \ 0 \ 0 \\
 \times & 4 \ 2 \\
 \hline
 & 2 \ 1 \ 0 \\
 + & 8 \ 4 \\
 \hline
 & 1 \ 0 \ 5 \ 0 \ 0
 \end{array}$$



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

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

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



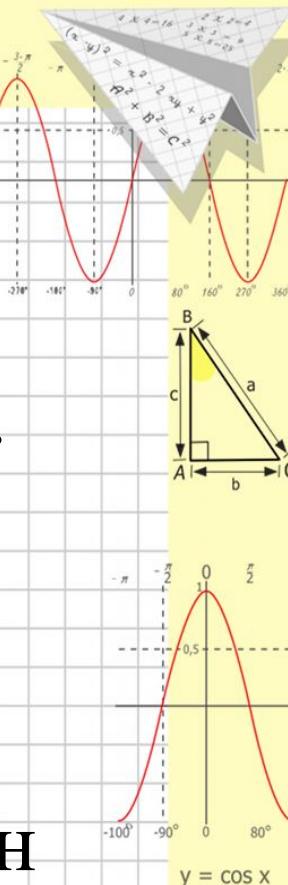
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

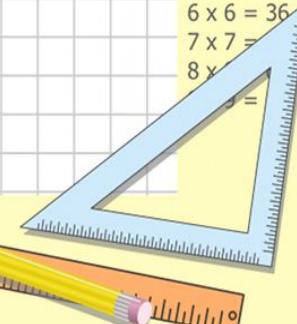
$$\underline{x = 70}$$

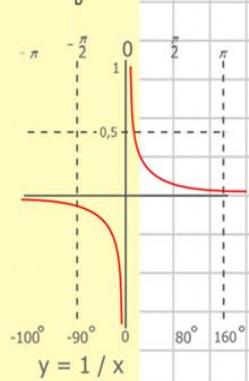
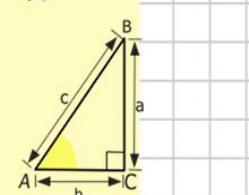
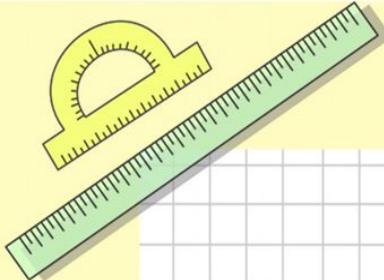
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases} \quad \underline{x = 70}$$

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



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





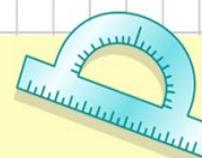
$$\begin{array}{r}
 & 1 \\
 & 2 \ 5 \ 0 \ 0 \\
 \times & 4 \ 2 \\
 \hline
 & 2 \ 1 \ 0 \\
 + & 8 \ 4 \\
 \hline
 & 1 \ 0 \ 5 \ 0 \ 0
 \end{array}$$



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

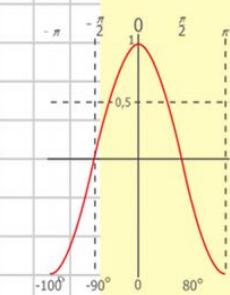
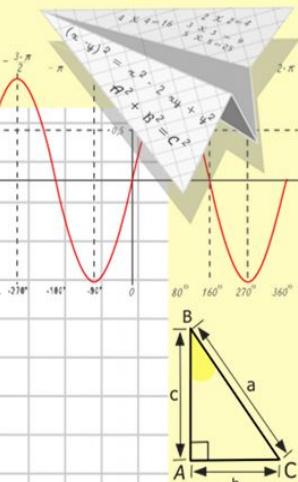
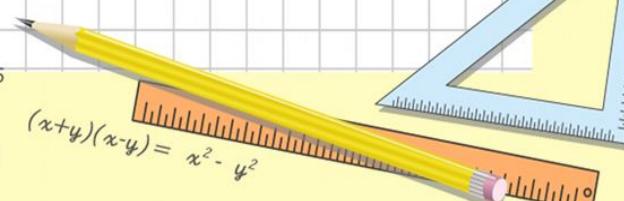
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

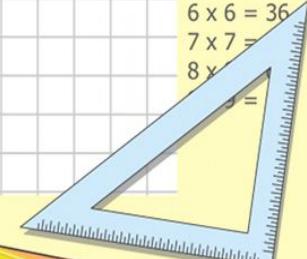


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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



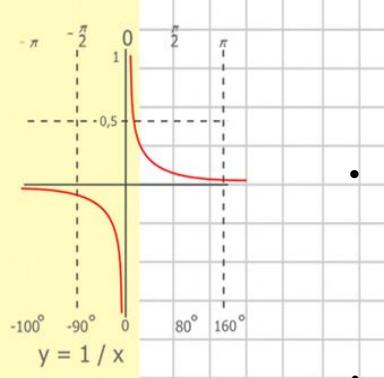
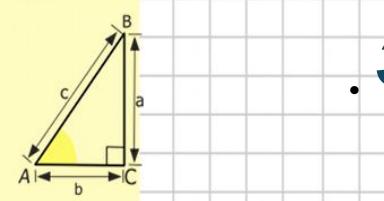
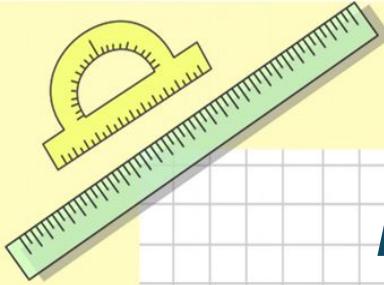
$$\begin{aligned}y &= \cos x \\2 \times 2 &= 4 \\3 \times 3 &= 9 \\4 \times 4 &= 16 \\5 \times 5 &= 25 \\6 \times 6 &= 36 \\7 \times 7 &= 49 \\8 \times 8 &= 64\end{aligned}$$



ИКТ на уроках математики

Актуальность

- Повышение уровня мотивации обучающихся.
 - Интерес к изучаемому материалу на уроке.
 - Развитие интеллектуального уровня,
 - творческих способностей детей.
 - Объективность оценивания.



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

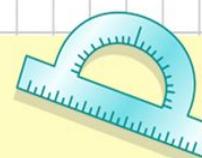


$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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



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

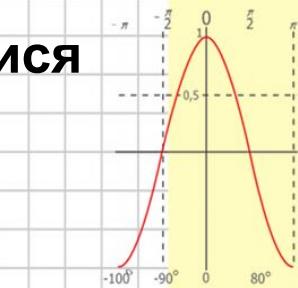
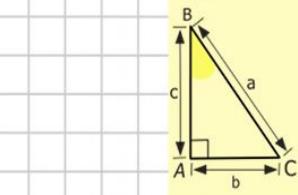
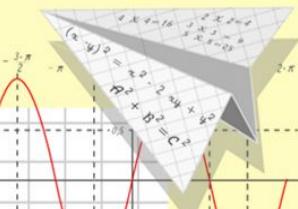


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

$x = 70$



$$y = \cos x$$

$$2 \times 2 = 4$$

$$3 \times 3 = 9$$

$$4 \times 4 = 16$$

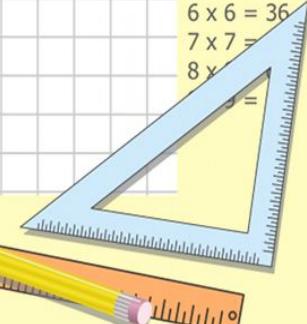
$$5 \times 5 = 25$$

$$6 \times 6 = 36$$

$$7 \times 7 =$$

$$8 \times$$

$$=$$



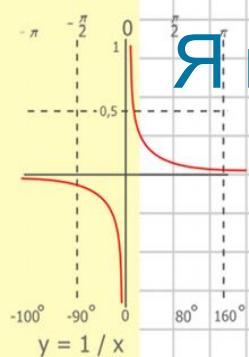
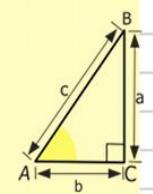
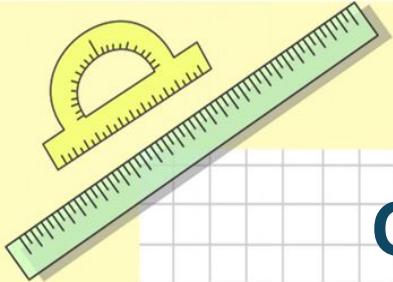
Применение на этапах урока:

- актуализации знаний;
- усвоения новых знаний;

- проверки понимания и закрепления учащимися новых знаний и способов действий;
- всесторонней проверки ЗУН.

Математик

а Организация восприятия новой информации



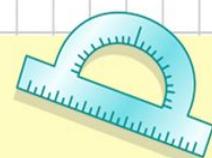
$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 2500 \\ + 210 \\ \hline 105000 \end{array}$$



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

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

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

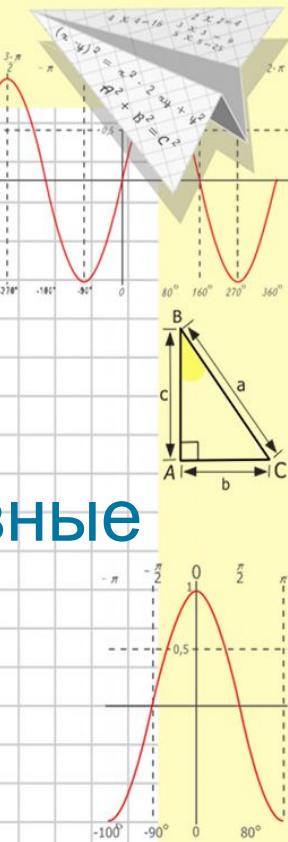
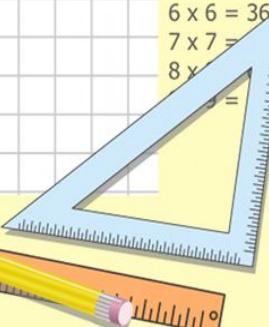


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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



Математик

**Проверка подготовленности класса к уроку или
закрепление знаний .**

Математический диктант.

$$3x - 6 = 9$$

$$-10x = 3$$

$$(x + 2)(5 - x) = 0$$

$$3x^2 - 27 = 0$$

$$x^2 + 25 = 0$$

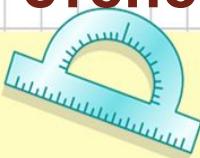
$$x^2 + 3x = 0$$

$$x^2 - 3x + 2 = 0$$

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

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

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



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

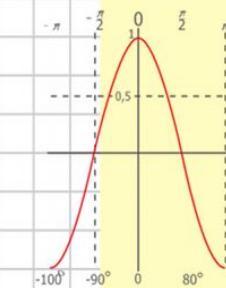
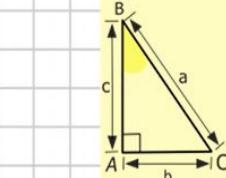
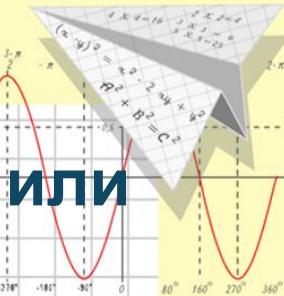
$$(x+y)(x-y) = x^2 - y^2$$

$$x = 70$$

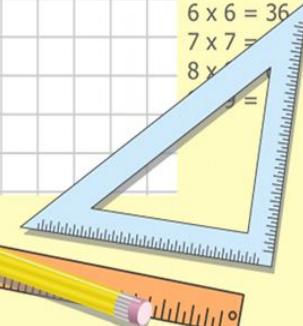
**Как найти степень целого
уравнения?**

**Сколько корней может
иметь уравнение с одной
переменной**

- **первой степени;**
- **второй степени;**
- **n-степени?**

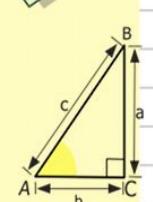
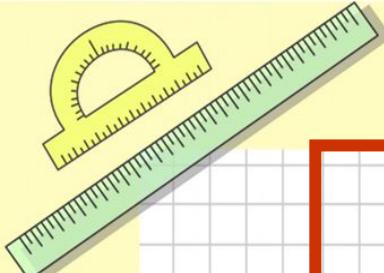


$$\begin{aligned} 2 \times 2 &= 4 \\ 3 \times 3 &= 9 \\ 4 \times 4 &= 16 \\ 5 \times 5 &= 25 \\ 6 \times 6 &= 36 \\ 7 \times 7 &= 49 \\ 8 \times 8 &= 64 \end{aligned}$$



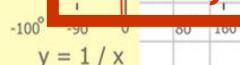
Математик

КВАДРАТНЫЕ УРАВНЕНИЯ



ПОЛНЫЕ КВАДРАТНЫЕ УРАВНЕНИЯ

$a \neq 0, b \neq 0, c \neq 0$



$$2x^2 + 5x - 7 = 0$$

$$6x + x^2 - 3 = 0$$

$$x^2 - 8x - 7 = 0$$

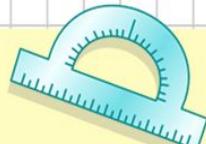
$$25 - 10x + x^2 = 0$$



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

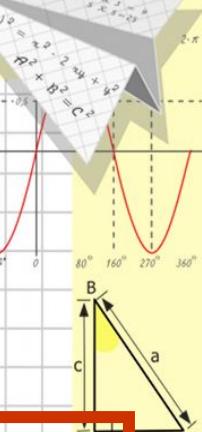
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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



НЕПОЛНЫЕ КВАДРАТНЫЕ УРАВНЕНИЯ

$a \neq 0, b = 0, c = 0$



$$3x^2 - 2x = 0$$

$$2x + x^2 = 0$$

$$125 + 5x^2 = 0$$

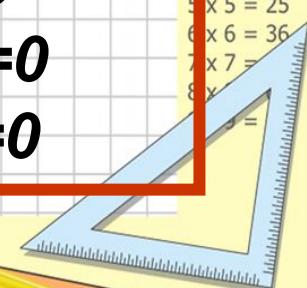
$$49x^2 - 81 = 0$$

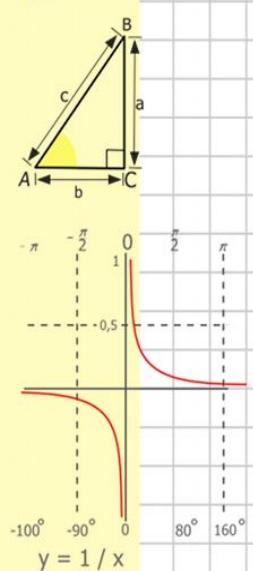
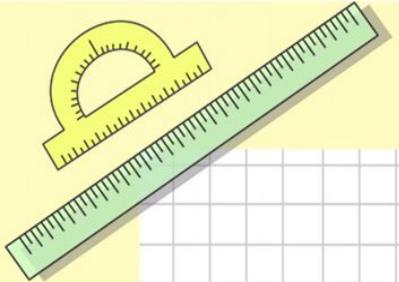
$$\begin{cases} y = 100 \\ x = 25y + 45 \end{cases}$$

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

$$\begin{cases} x = 70 \\ (x+y)(x-y) = x^2 - y^2 \end{cases}$$

$$x = 70$$





$$D = b^2 - 4ac$$

$$D > 0$$

2 корня

$$D = 0$$

1 корень

$$D < 0$$

Корней нет

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

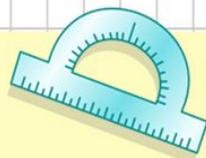


$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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



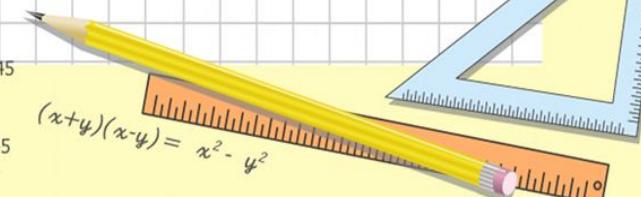
$$\sin 90^\circ = 1$$



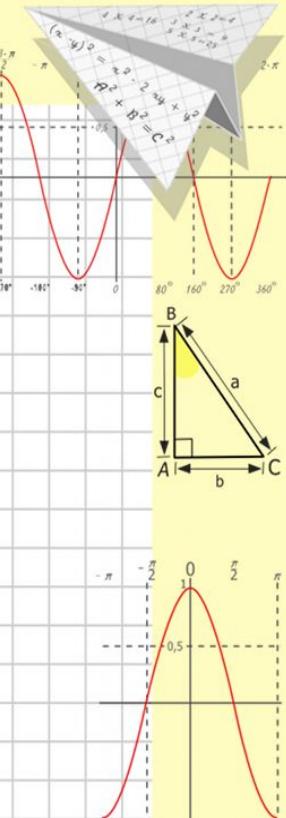
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$\frac{x = 70}{}$$



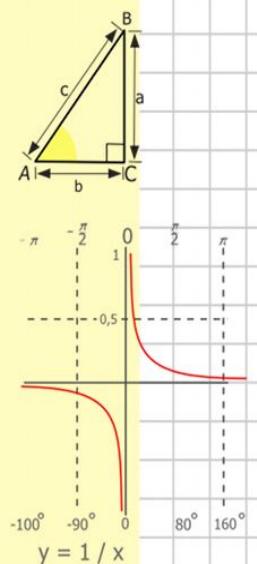
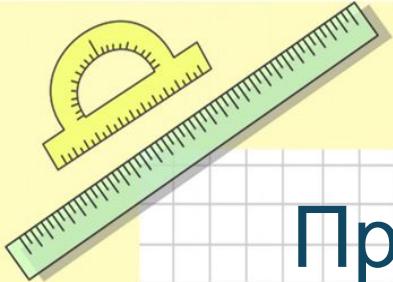
$$(x+y)(x-y) = x^2 - y^2$$



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

Математик

а Проведение устных упражнений



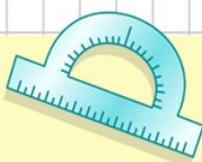
$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$



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

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

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

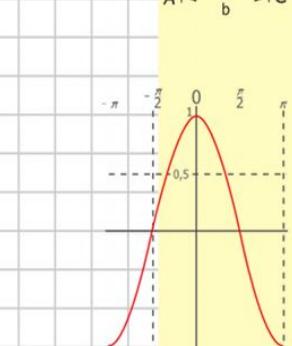
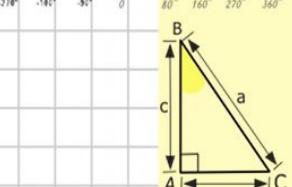
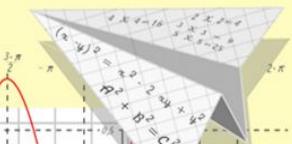


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

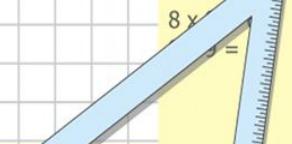
$$(x+y)(x-y) = x^2 - y^2$$

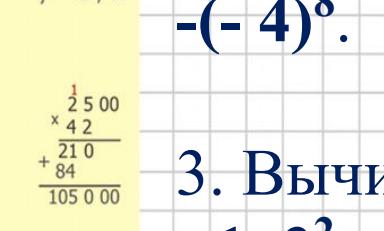
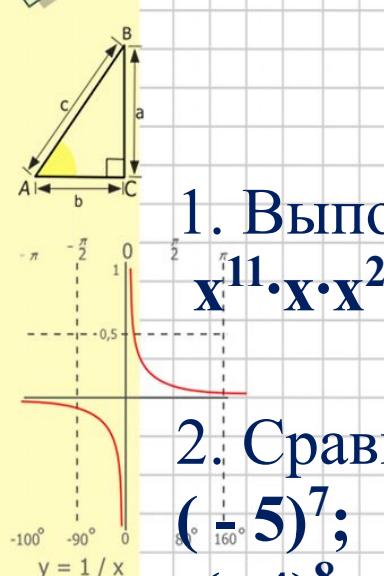
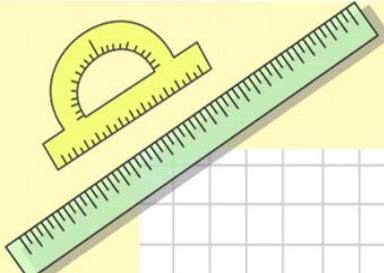
$$x = 70$$



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

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





Игра «Молчанка»

1. Выполните действия:

$$x^{11} \cdot x \cdot x^2 ; \quad x^{14} : x^5 ; \quad (a^4)^3 ; \quad (-3a)^2.$$

2. Сравнить значение выражения с нулем:

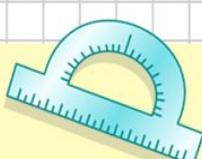
$$(-5)^7; \quad (-6)^{18}; \quad (-4)^{11} \cdot (-4)^8; \quad (-5)^{18} \cdot (-5)^6; \\ -(-4)^8.$$

3. Вычислить значение выражения:

$$-1 \cdot 3^2; \quad (-1 \cdot 3)^2 \quad 1 \cdot (-3)^2; \quad -(2 \cdot 3)^2; \\ 1^2 \cdot (-3)^2$$

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

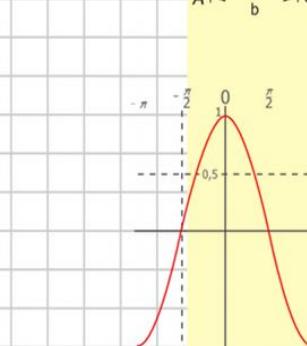
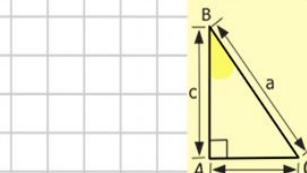
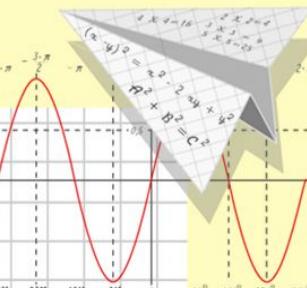
$$\sin 90^\circ = 1$$



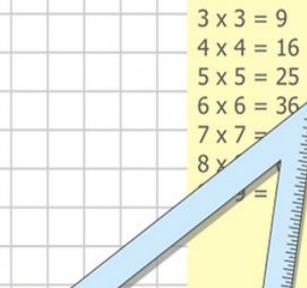
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

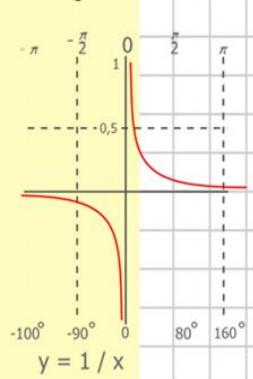
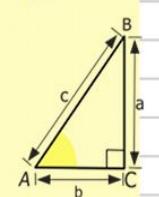
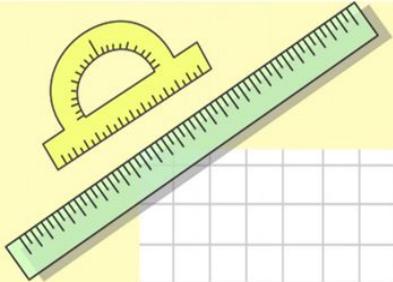
$$\frac{(x+y)(x-y)}{x = 70} = \frac{x^2 - y^2}{x = 70}$$



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



ОТВЕТЫ:



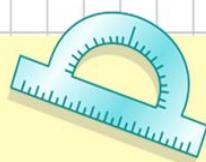
$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 105000 \end{array}$$



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

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

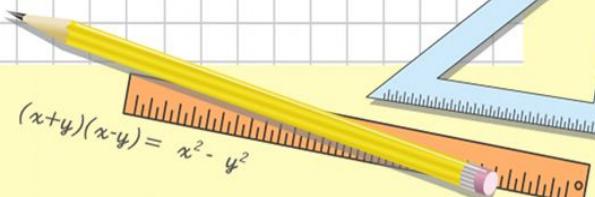
$$\sin 90^\circ = 1$$



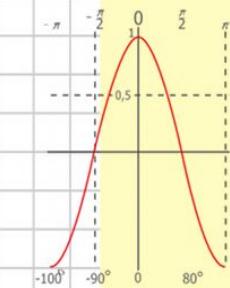
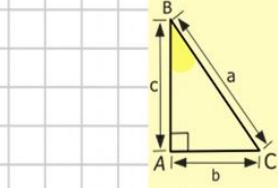
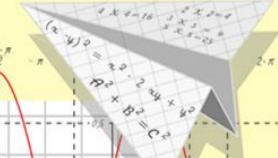
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$\frac{x = 70}{x = 70}$$



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



$$y = \cos x$$

$$2 \times 2 = 4$$

$$3 \times 3 = 9$$

$$4 \times 4 = 16$$

$$5 \times 5 = 25$$

$$6 \times 6 = 36$$

$$7 \times 7 =$$

$$8 \times$$

$$=$$

$$9 \times$$

$$10 \times$$

$$11 \times$$

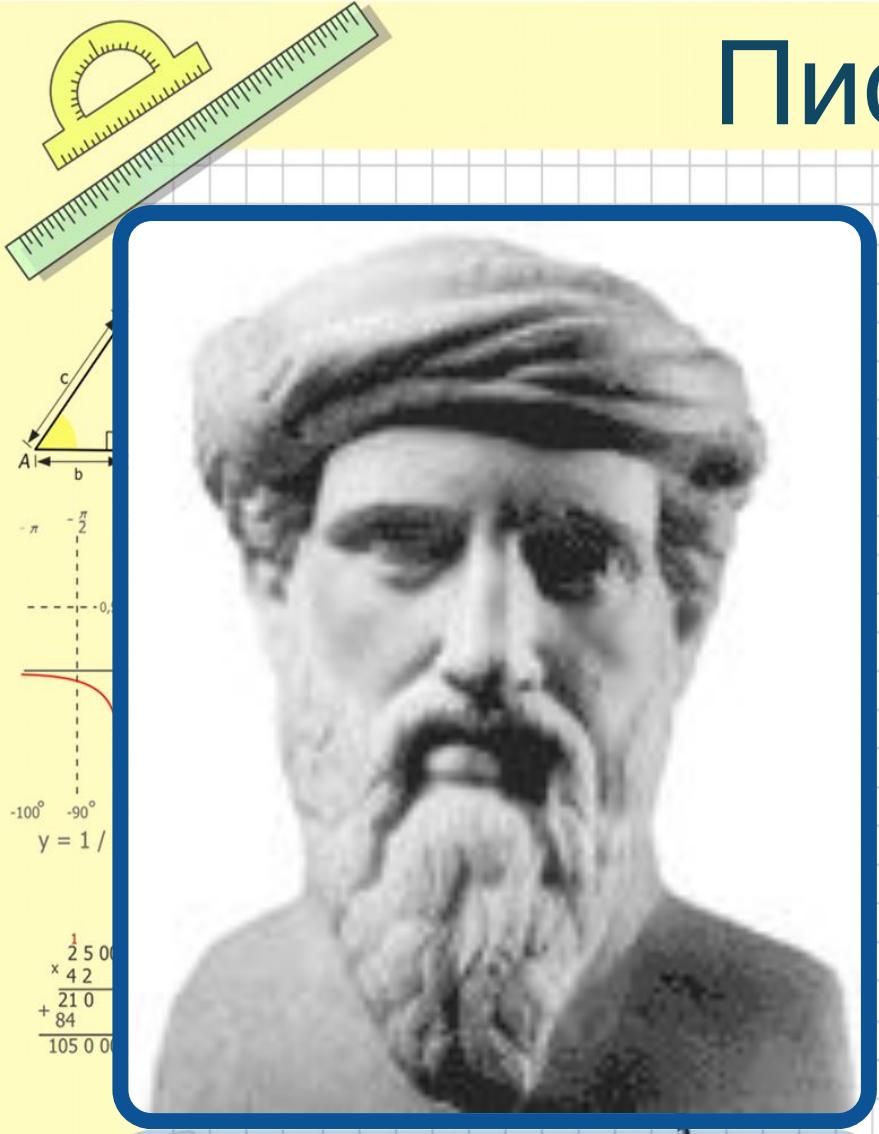
$$12 \times$$

$$13 \times$$

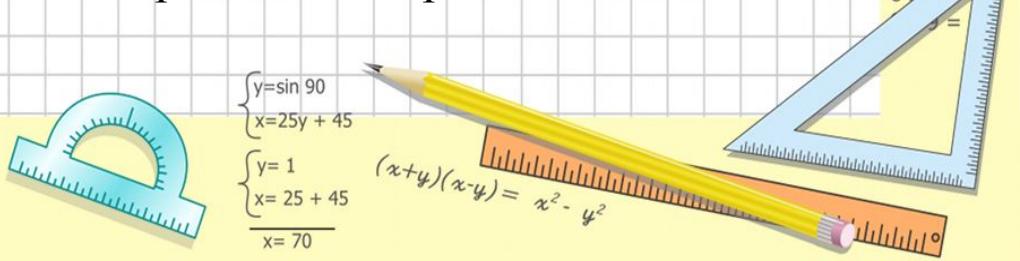
$$14 \times$$

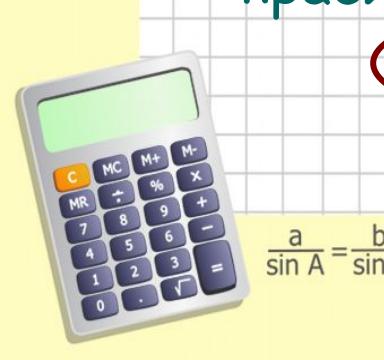
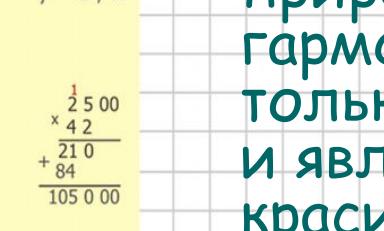
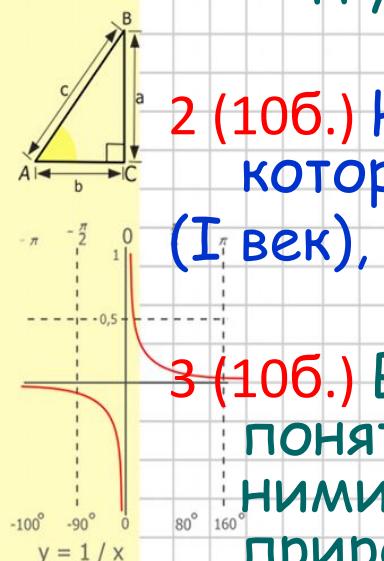
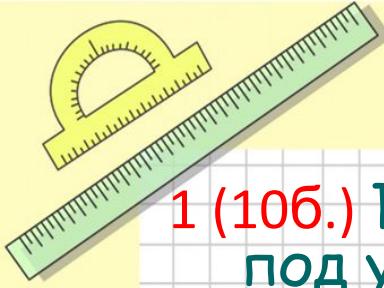
$$15 \times$$

Пифагор



Знаменитый греческий философ и математик Пифагор Самосский, именем которого названа теорема, жил около 2,5 тысяч лет тому назад. Дошедшие до нас биографические сведения о Пифагоре отрывочны и далеко недостоверны. С его именем связано много легенд. Достоверно известно, что Пифагор много путешествовал по странам Востока, посещал Египет и Вавилон. В одной из греческих колоний Южной Италии им была основана знаменитая «Пифагорова школа», сыгравшая важную роль в научной и политической жизни древней Греции. Именно Пифагору приписывают доказательство известной геометрической теоремы.





1 (10б.) По какой траектории летит камень, брошенный под углом к горизонту?

1) по прямой; 2) по параболе; 3) по гиперболе.

2 (10б.) Назовите древний геометрический инструмент, который по утверждению римского поэта Овидия (I век), был изобретен в Древней Греции.

1) угольник; 2) транспортир; 3) циркуль.

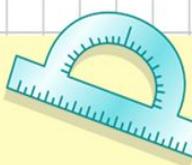
3 (10б.) В древности учение об этом математическом понятии было в большом почете у пифагорийцев. С ними они связывали мысли о порядке и красоте в природе, оозвучных аккордах в музыке и гармонии во Вселенной. Оно применяется не только в математике, но и в архитектуре, искусстве, и является условием правильного, наглядного и красивого изображения.

1) пропорция; 2) уравнение; 3) система.

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

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

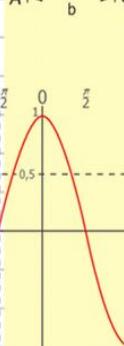
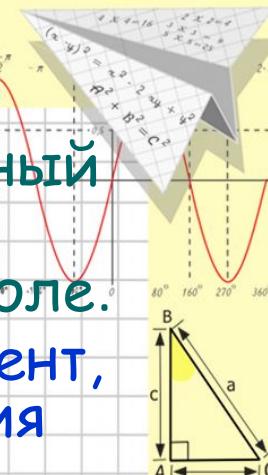
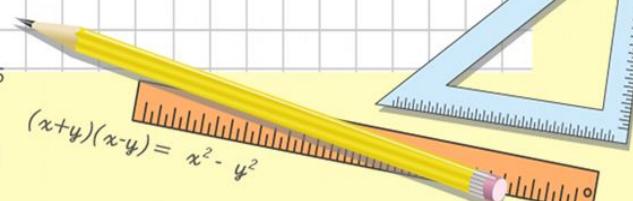
$$\sin 90^\circ = 1$$



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

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

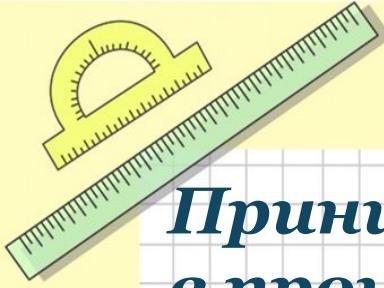
$$(x+y)(x-y) = x^2 - y^2$$



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

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

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



**Принцип активности ребенка
в процессе обучения был и остается
одним из основных в дидактике.**

**К.Д. Ушинский когда-то сказал, что
знания будут тем прочнее и полнее, чем
большим количеством чувств они
воспринимаются. Труд на уроке с
применением ИКТ - процесс осознанного
усвоения материала. Как говорит
пословица:**

**«Тебе скажут - ты забудешь,
тебе покажут - ты запомнишь,
ты сделаешь - ты поймешь».**

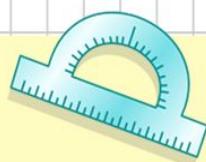
**Применение ИКТ – реальность
современного урока!**

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

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



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

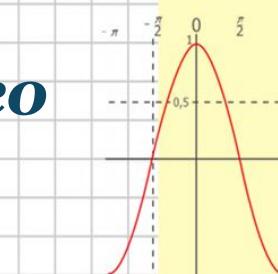
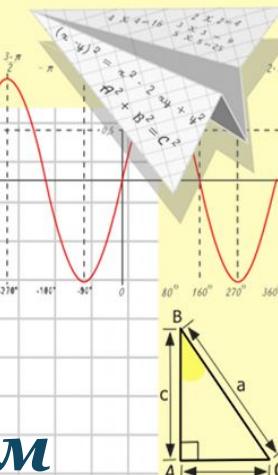
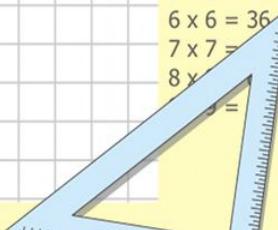


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$\frac{x = 70}{x = 70}$$

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



$$y = \cos x$$

$$2 \times 2 = 4$$

$$3 \times 3 = 9$$

$$4 \times 4 = 16$$

$$5 \times 5 = 25$$

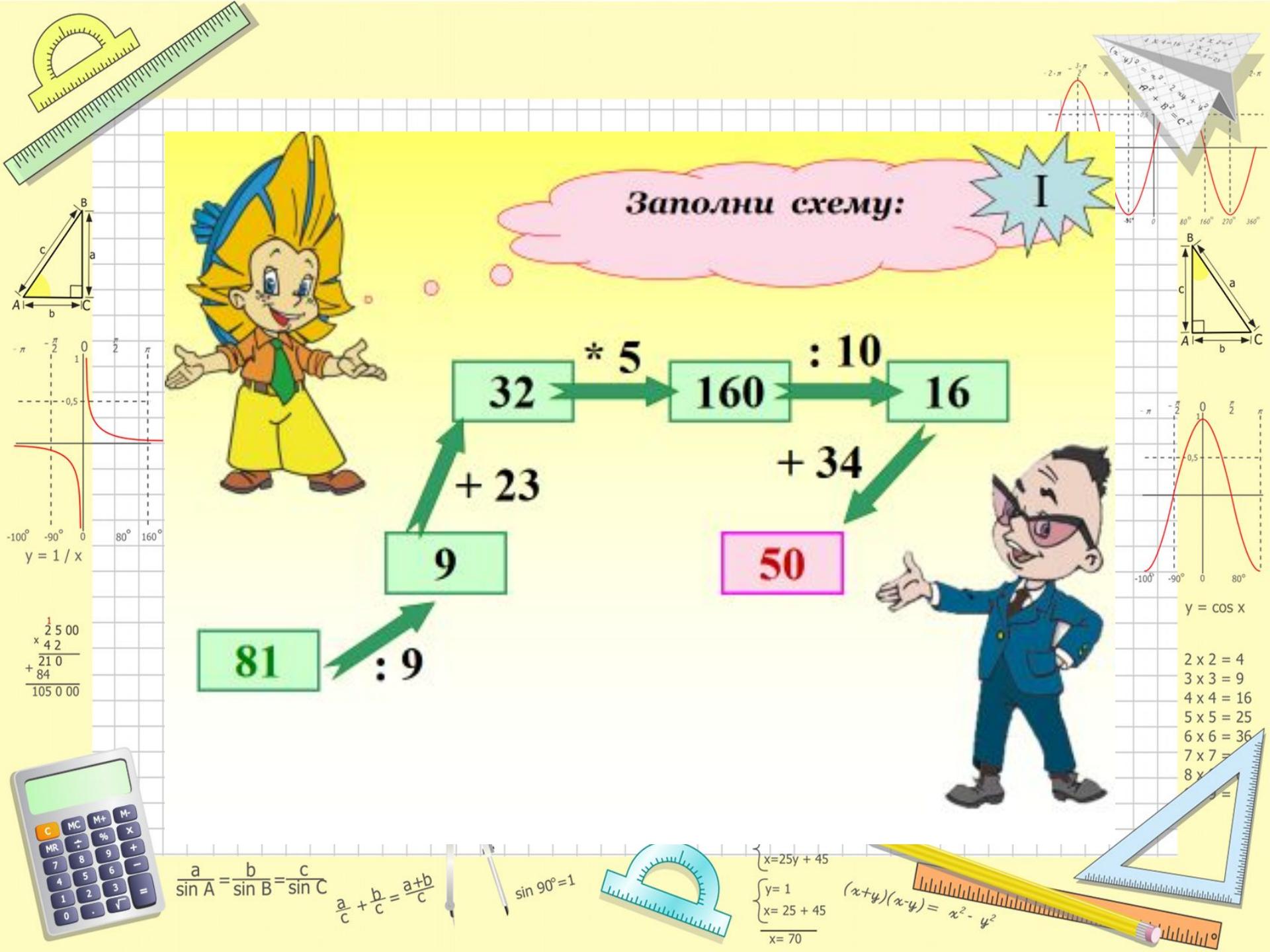
$$6 \times 6 = 36$$

$$7 \times 7 = 49$$

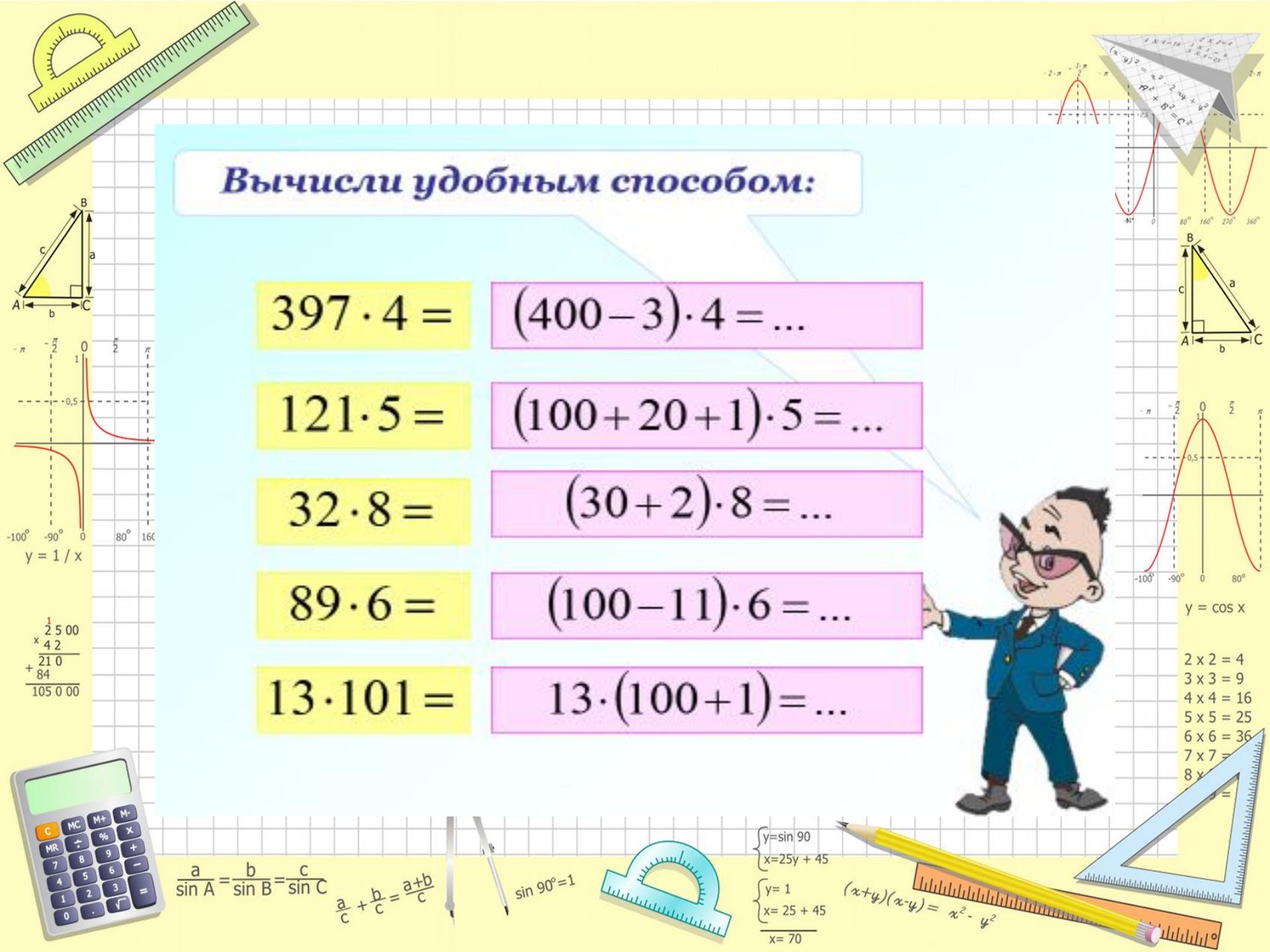
$$8 \times 8 = 64$$

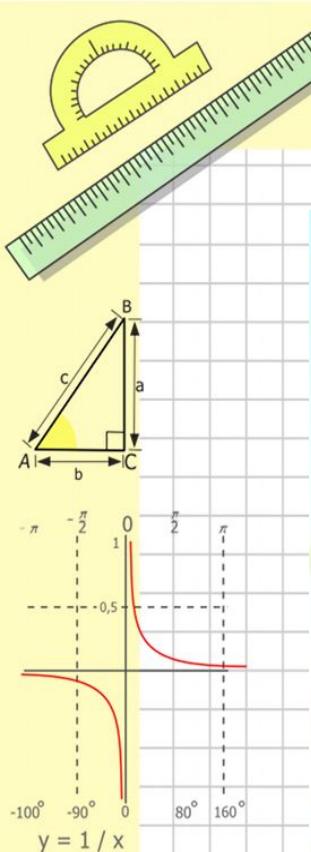
$$9 \times 9 = 81$$











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



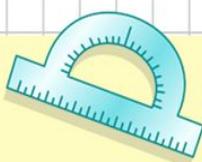
$$(17,28 : 3,2 + 1,4 \cdot 2,5) : 89 - 0,08 =$$

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

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



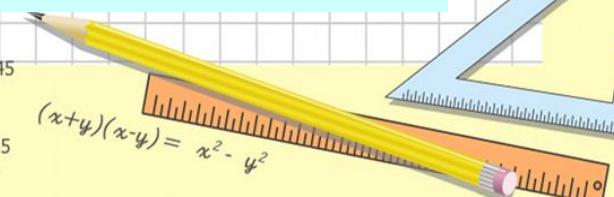
$$\sin 90^\circ = 1$$



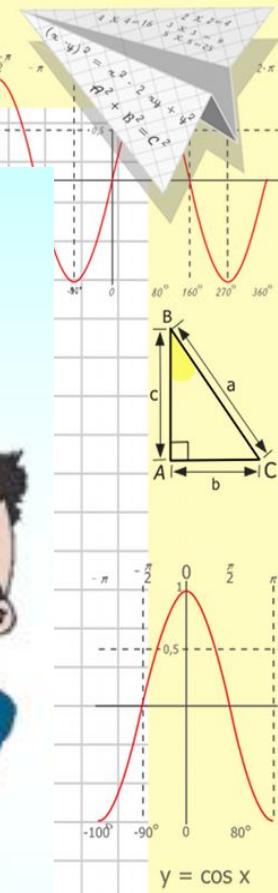
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



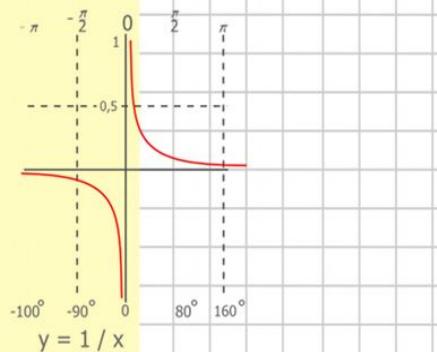
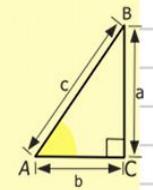
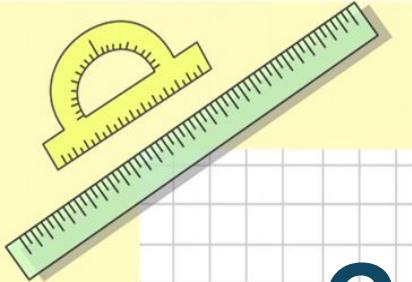
**Помогите
справиться с
заданием:**



$$y = \cos x$$

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

Спасибо за внимание!!!



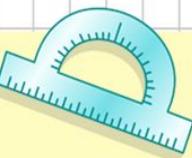
$$\begin{array}{r}
 1 \\
 \times 2500 \\
 \hline
 210 \\
 + 84 \\
 \hline
 105000
 \end{array}$$



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

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

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

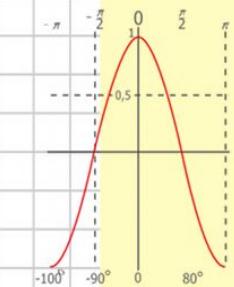
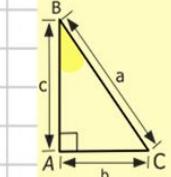
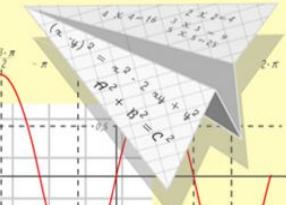


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

$$x = 70$$



$$y = \cos x$$

$$2 \times 2 = 4$$

$$3 \times 3 = 9$$

$$4 \times 4 = 16$$

$$5 \times 5 = 25$$

$$6 \times 6 = 36$$

$$7 \times 7 =$$

$$8 \times$$

