

# Математик

## а

# Дробные выражения.

## 6 класс.

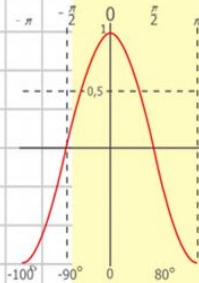
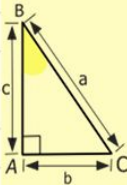
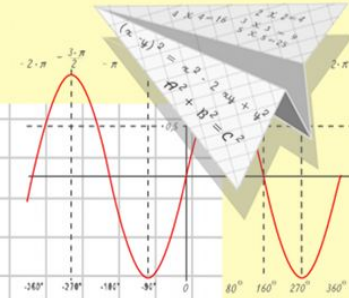
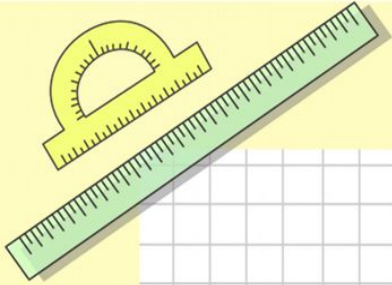
Выполнила:

учитель математики

ГБОУ СОШ №3

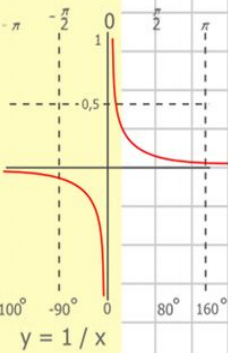
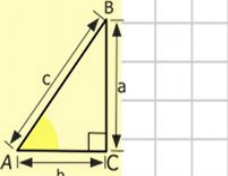
пгт Безенчук

Качанова Т.В.



$y = \cos x$

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



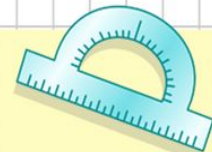
$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105000 \end{array}$$

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

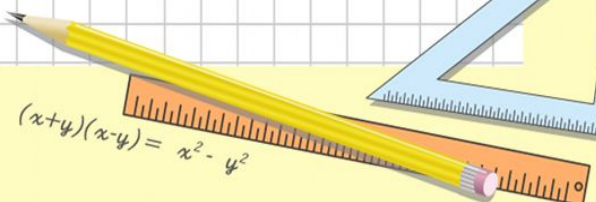
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$



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



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



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

# Тема урока «Дробные выражения»

А девизом будут такие слова:

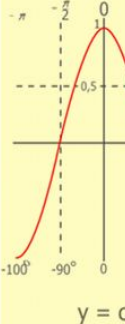
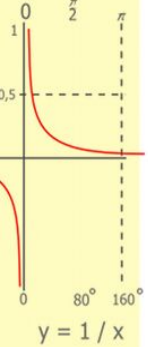
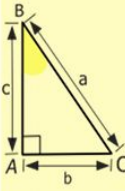
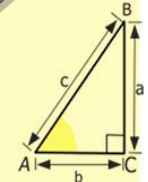
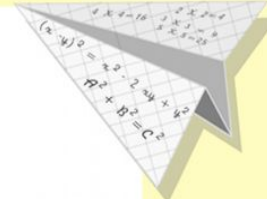
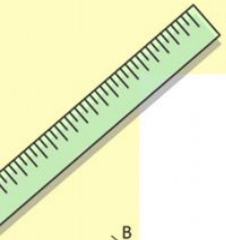
**Думать – коллективно!**

**Решать – оперативно!**

**Отвечать – доказательно!**

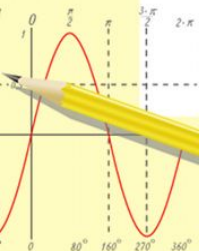
**Бороться – старательно!**

**И открытия нас ждут обязательно!**



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

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



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

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

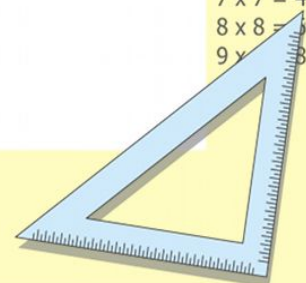
$$\sin 90^\circ = 1$$



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

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

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



# Устная работа.

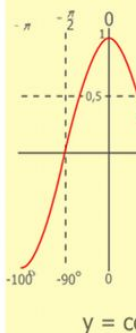
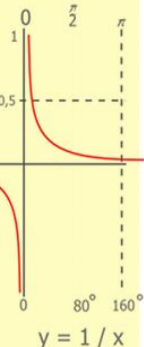
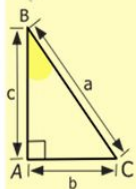
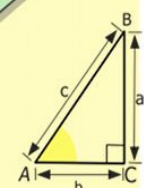
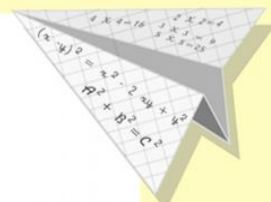
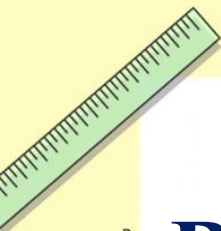
Вычислите:

а)  $\frac{3}{8} \cdot \frac{1}{7} \cdot \frac{8}{3} =$

б)  $10 \cdot \frac{4}{7} \cdot \frac{21}{40} =$

в)  $\frac{14}{19} : \frac{2}{38} =$

г)  $\frac{4}{15} \cdot \frac{15}{16} + \frac{3}{11} \cdot \frac{22}{12} =$



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

- 2 x 2 = 4
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$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

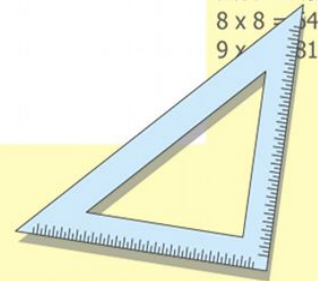
$$\sin 90^\circ = 1$$



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

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



# Устная работа.

• Решите задачи.

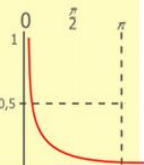
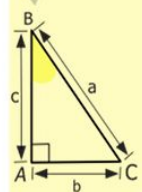
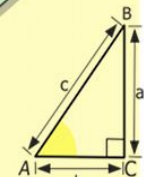
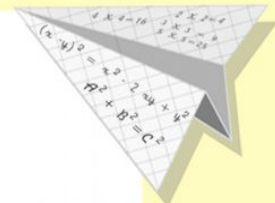
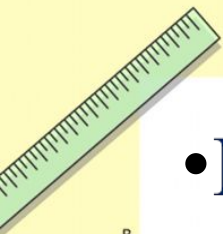
1) В первые классы приняли 75 человек, что составляет  $\frac{1}{10}$  всех учащихся школы.

Сколько учеников в школе?

2) Найти 20% от 50.

3) В парке 100 деревьев.  $\frac{3}{5}$  из них березы.

Сколько берез в парке?



$$y = 1/x$$

$$y = \cos$$

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

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



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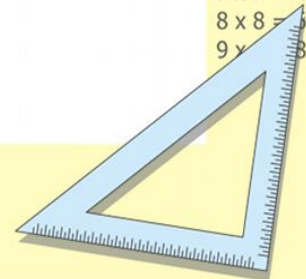


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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

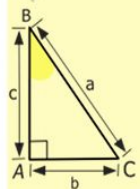
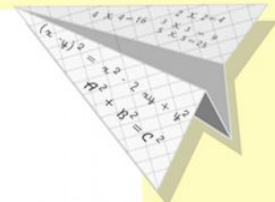
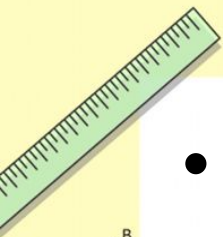


# Устная работа.

- Решите задачи.

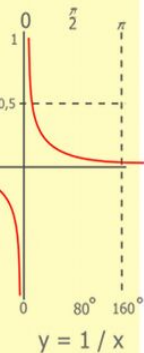
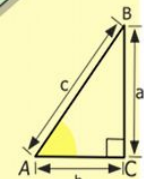
4) Турист прошел 50% пути, что составляет 18 км. Каков весь путь?

5) В хоре 90 человек.  $\frac{1}{9}$  из них мальчики. Сколько девочек в хоре?



$$y = \cos$$

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



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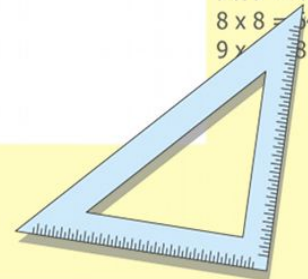


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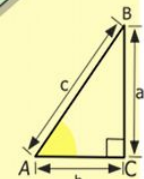
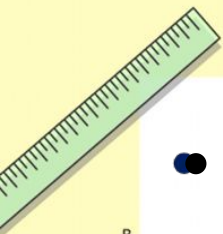
$$(x+y)(x-y) = x^2 - y^2$$



# Повторение.

- Какое выражение называют дробным?
- Как называются выражения, находящиеся над чертой? Под чертой?
- Каким может быть числитель и знаменатель дробного выражения?
- Запишите в виде дробного выражения частное:

$$\left(3\frac{3}{8} \cdot \frac{4}{9} + 9,54\right) : (5,1 - 2,8) =$$



$$\begin{array}{r} \frac{1}{2} 5\ 00 \\ \times 42 \\ \hline 21\ 0 \\ + 84\ 0 \\ \hline 105\ 0\ 00 \end{array}$$



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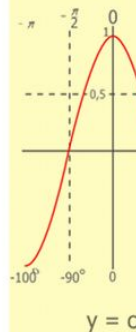
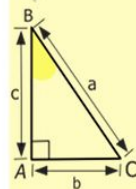
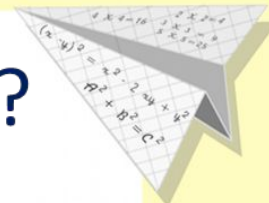
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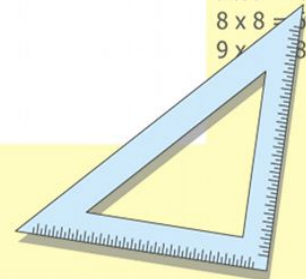
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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# Работа в парах.

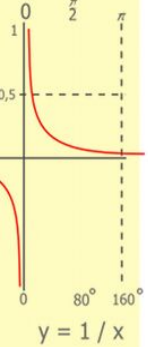
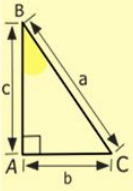
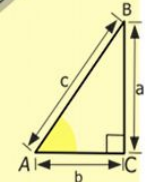
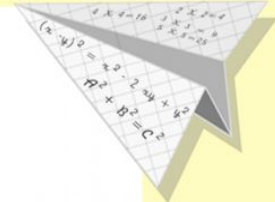
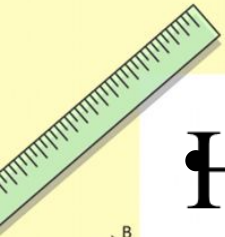
Найти значение выражения:

$$а) \frac{3,7}{11,1} =$$

$$в) \frac{0,035}{0,49} =$$

$$б) \frac{1\frac{1}{4}}{1\frac{1}{2}} =$$

$$г) \frac{4,6 \cdot 2,1 \cdot 0,5}{3,5 \cdot 2,3 \cdot 0,3} =$$



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

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

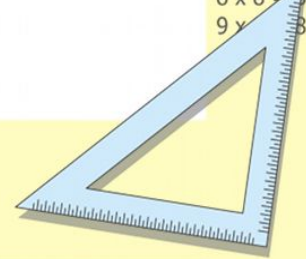


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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



# Самостоятельная работа.

## Вариант 1.

Найдите значение выражения:

а)  $\frac{4,2}{6,3} =$

в)  $\frac{7,5 \cdot 1,8 \cdot 4,8}{3,6 \cdot 9,6 \cdot 2,5} =$

б)  $\frac{1\frac{1}{3}}{1\frac{1}{2}} =$

г)  $\frac{1,2 \cdot 2,25 \cdot 0,15}{0,9 \cdot 1,5 \cdot 4,2} =$

## Вариант 2.

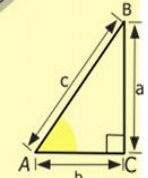
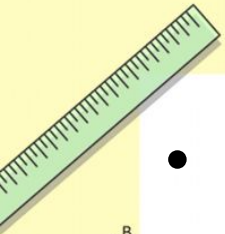
Найдите значение выражения:

а)  $\frac{6,3}{7,2} =$

в)  $\frac{4,8 \cdot 1,6 \cdot 0,7}{3,2 \cdot 9,6 \cdot 1,4} =$

б)  $\frac{2\frac{1}{2}}{2\frac{1}{3}} =$

г)  $\frac{9,2 \cdot 6,4 \cdot 0,15}{1,6 \cdot 4,6 \cdot 0,03} =$



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



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

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

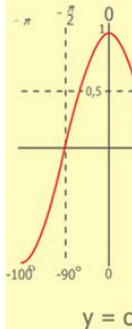
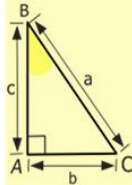
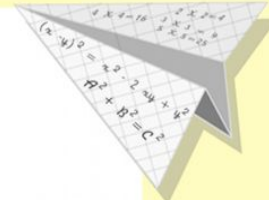


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

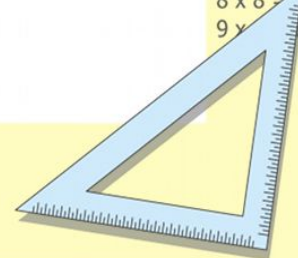
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$

$$x = 70$$

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



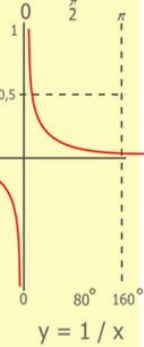
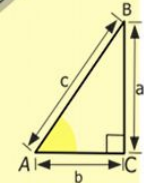
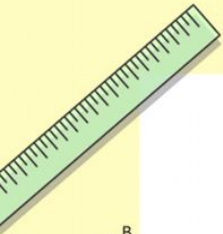
2 x 2 = 4
3 x 3 = 9
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9 x 9 = 81





# Физкультминутка.

Ах, как долго мы писали,  
Глазки у ребят устали.  
Посмотрите все в окно,  
Ах, как солнце высоко.  
В классе радугу построим,  
Вверх по радуге пойдём,  
Вправо, влево повернём,  
А потом скатимся вниз,  
Жмурься сильно, но держись.



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

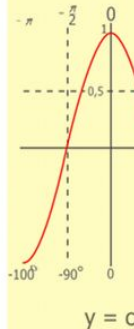
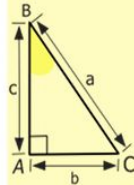
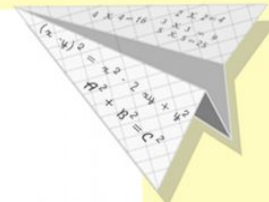
$$\sin 90^\circ = 1$$



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

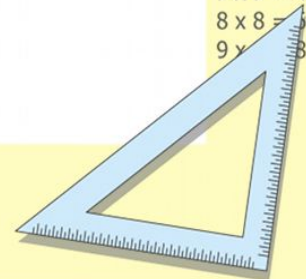
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



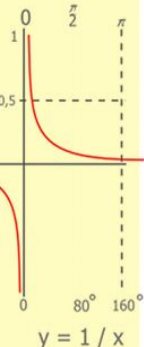
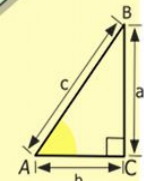
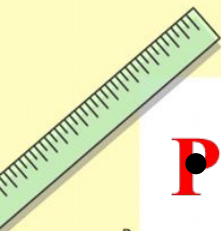
$$y = \cos$$

- 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

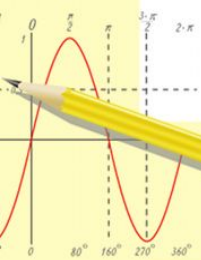


**Расставь порядок действий и найди значение дробного выражения.**

$$\left(3\frac{3}{8} \cdot \frac{4}{9} + 9,54\right) : (5,1 - 2,8) = \frac{3\frac{3}{8} \cdot \frac{4}{9} + 9,54}{5,1 - 2,8} =$$



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



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

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

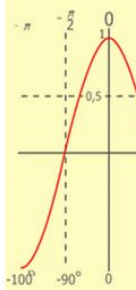
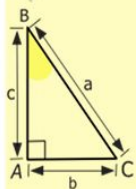
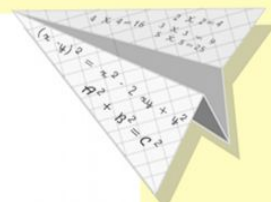
$$\sin 90^\circ = 1$$



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

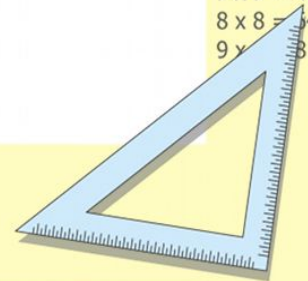
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



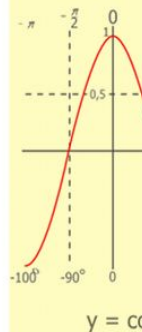
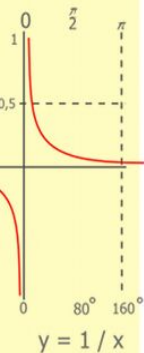
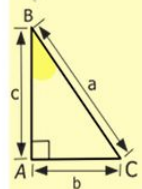
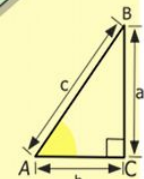
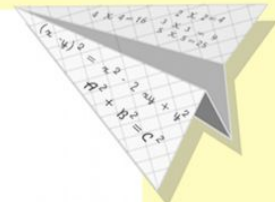
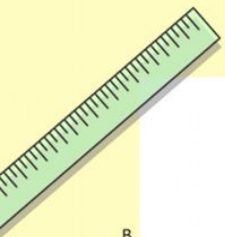
$$y = \cos$$

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



# Работа в группах.

## Учебник № 716 (ж , з) №697(а)



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

- 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



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

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

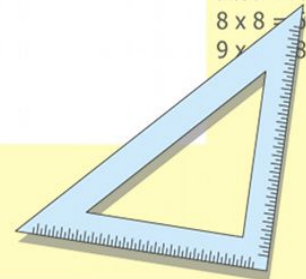
$$\sin 90^\circ = 1$$



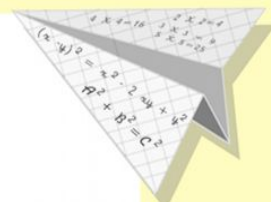
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



# Домашнее задание:

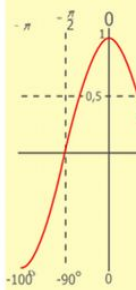
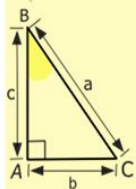


1) повторить правила, стр.110 учебника

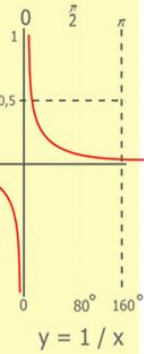
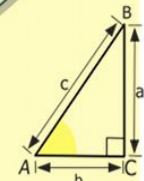
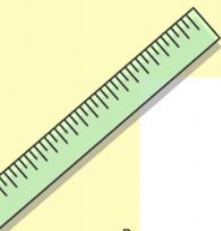
2) индивидуальные задания по уровням сложности:

1 группа– № 808 (а), № 846(а), № 705

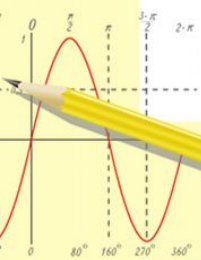
2 группа– № 747 (а,б,д,е,),№701(устно)



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



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



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

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

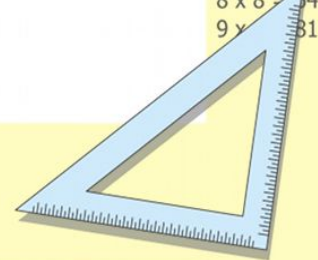
$$\sin 90^\circ = 1$$



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

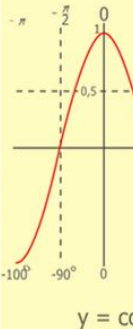
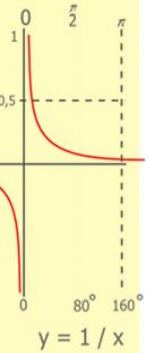
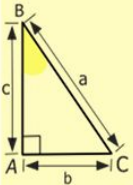
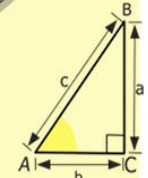
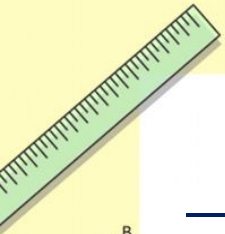
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



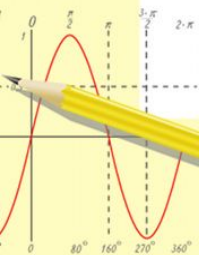
# Рефлексия.

- Что нового вы узнали сегодня на уроке?
- Какие выражения называются дробными?
- Приведите пример дробного выражения. Назовите числитель и знаменатель.
- По каким правилам выполняют действия с дробными выражениями?



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

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



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

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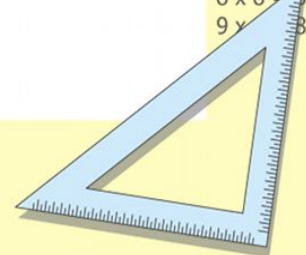
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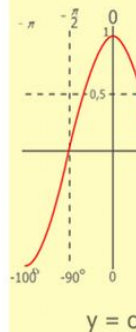
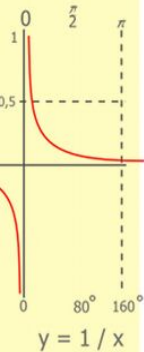
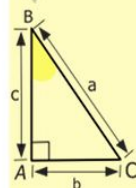
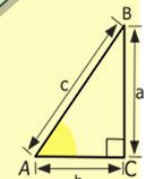
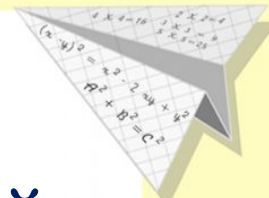
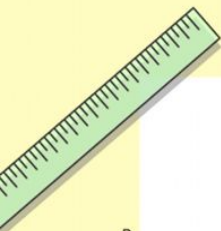
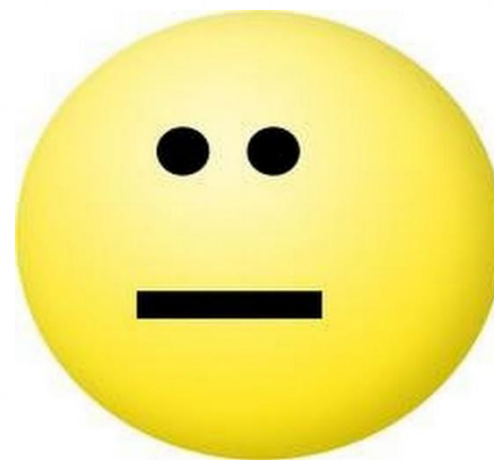
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



# Рефлексия.

Нарисуйте смайликом результаты своей работы.



$$\begin{array}{r} 1\ 2\ 5\ 00 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 105\ 000 \end{array}$$

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