

Мекеме атауы “Н.Бозжанов атындағы орта

мектеп мектепке дейінгі  
шағын орталығымен” МКМ

Садыков Аскар Садыкович

Математика пәні мұғалімі

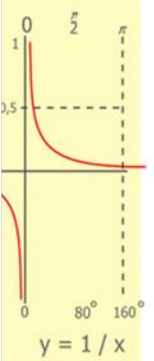
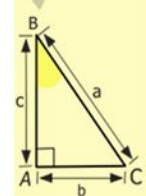
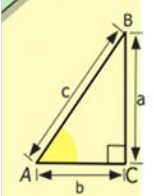
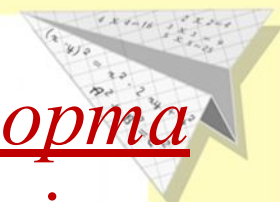
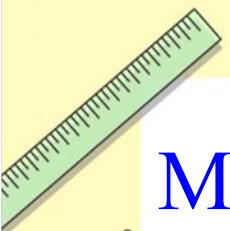
17 жыл

бірінші

математика

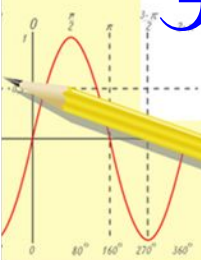
“Цилиндр”

Электрондық поштасы [sadas7275@mail.ru](mailto:sadas7275@mail.ru)



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

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



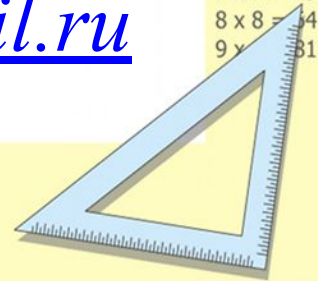
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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



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

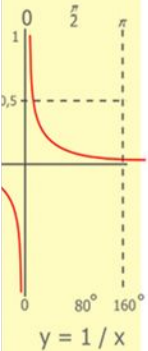
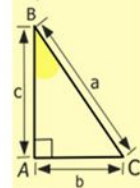
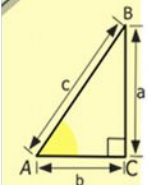
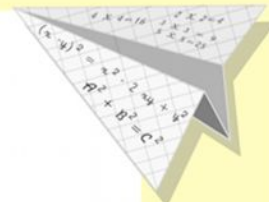
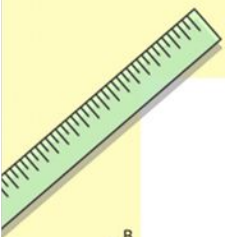
$$(x+y)(x-y) = x^2 - y^2$$



# Сабақтың тақырыбы

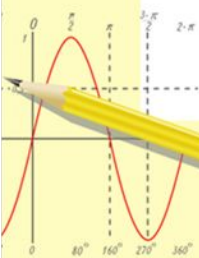
# ТІК

# ШИШЕНДІР



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

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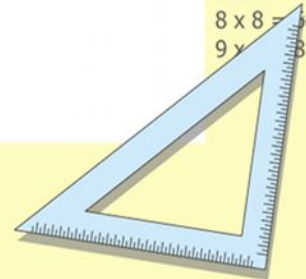
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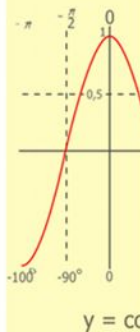
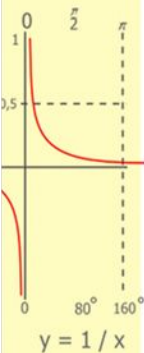
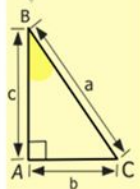
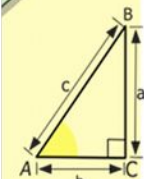
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



# ЖАЛПЫ МАҚСАТЫ:

*Оқушыларға цилиндр туралы білім беру. Оларға цилиндрдің анықтамасы, элементтері, қималары, жазбасы түсінігін беріп, бетінің ауданын табу формулаларымен таныстыру. Оқушылардың тақырып бойынша алған білімдерін тереңдетіп, жинақтау, жүйелеу, бекіту; логикалық ойлау қабілеті мен дағдыларын жетілдіру, белсенділіктерін, оқуға, жауапкершілікке, өз бетінше еңбектенуге тәрбиелеу.*



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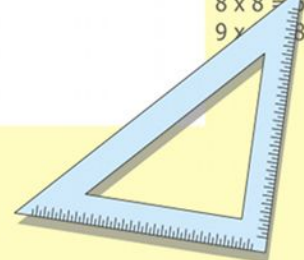
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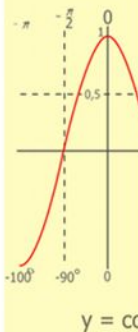
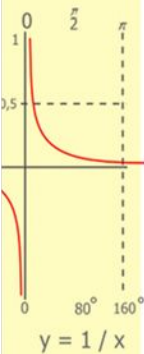
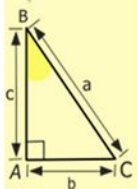
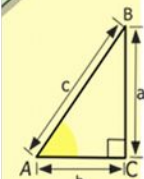
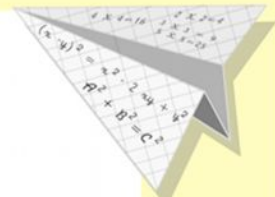
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



# ОҚУ НӘТИЖЕСІ:

- Оқушының ой қиялының дамуына, пікір айтуына еркіндік беріледі
- Өз өміріне, қоршаған ортаға сын көзбен қарауға үйренеді.
- Шыншылдық, әділдікке дағдыланады.
- Өзгенің пікірімен санасуға үйренеді. Өз пікірін қорғай, дәлелдей алады
- Әр түрлі шығармашылық жұмыстарға, топпен жұмыс істеуге дағдыланады.
- Математикаға деген қызығушылықтары артады



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

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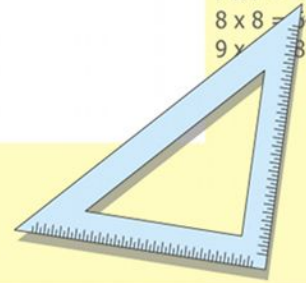
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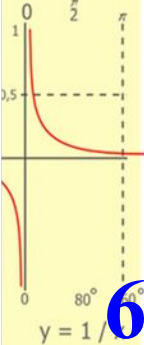
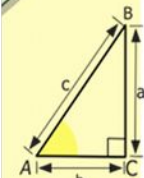
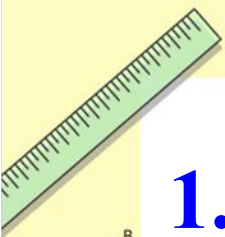
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



# САБАҚ БАРЫСЫ

1. Ұйымдастыру кезеңі
2. Жаңа тақырып
3. Сарамандық жұмыс
4. Бекіту
5. Сергіту сәті
6. Іскерлік ойын
7. Тест
8. Бағалау.
9. Үйге тапсырма



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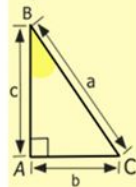
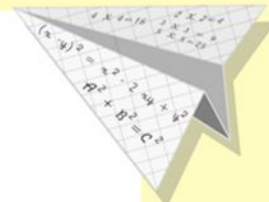
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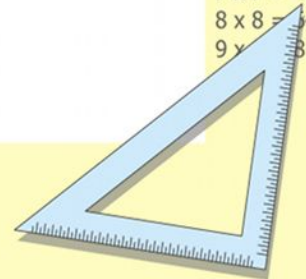
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# ШАТТЫҚ ШЕҢБЕРІ

Білім деген биік шың,  
Бақытқа сені жеткізер.

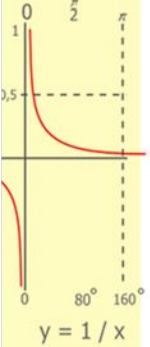
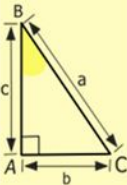
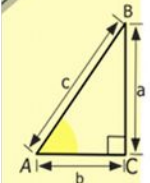
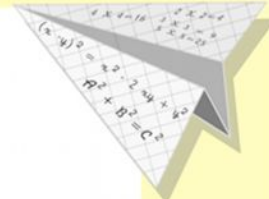
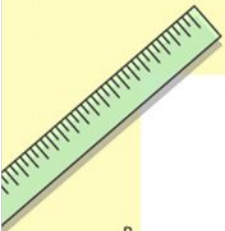
Білім деген ақылшың,  
Қиындықтан өткізер.

Жастықтың оты қайдасың,

Жүректі түртіп қозғамай.

Ғылымның білім пайдасын,

Дүниенің көркін болжамай



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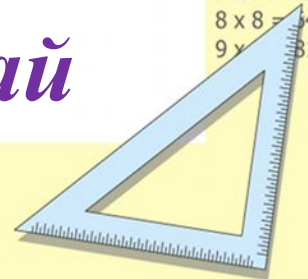


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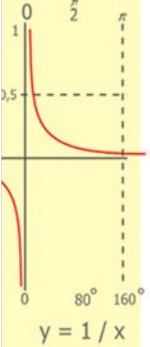
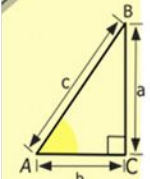
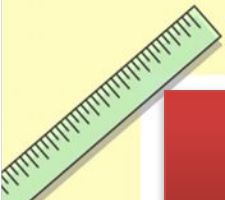
$$x = 70$$

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



ТОПҚА БӨЛУ:

ОҚУШЫЛАР ДӨНГЕЛЕК, ТІК  
ТӨРТБҰРЫШ, ҮШБҰРЫШ,  
ПАРАЛЕЛЛОГРАММ  
СЫЗЫЛҒАН ПАРАҚШАЛАР  
ТАҢДАЙДЫ



$$\begin{array}{r} 1\ 5\ 00 \\ \times 42 \\ \hline 21\ 0 \\ + 84\ 0 \\ \hline 105\ 000 \end{array}$$



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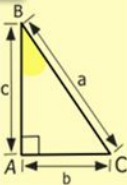
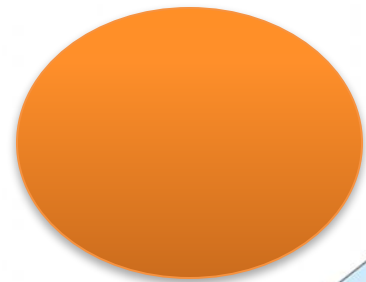


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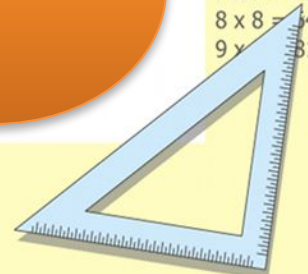
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# Бағалау парақтары

Р/ С	Оқушының аты-жөні	Теориялық білім	Практикалық жұмыс	есеп шығару	Іскерлік ойын	Блиц-тест	Сыни көзқарас	Топқа қосқан үлесі	Топ ережесін сақтауы	Дәптерінің тазалығы	Жалпы бал	Орташа бал	Қорытынды баға
1													

0-4 ұпай - «2»

5-6 ұпай - «3»

7-8 ұпай - «4»

9-10 ұпай - «5»

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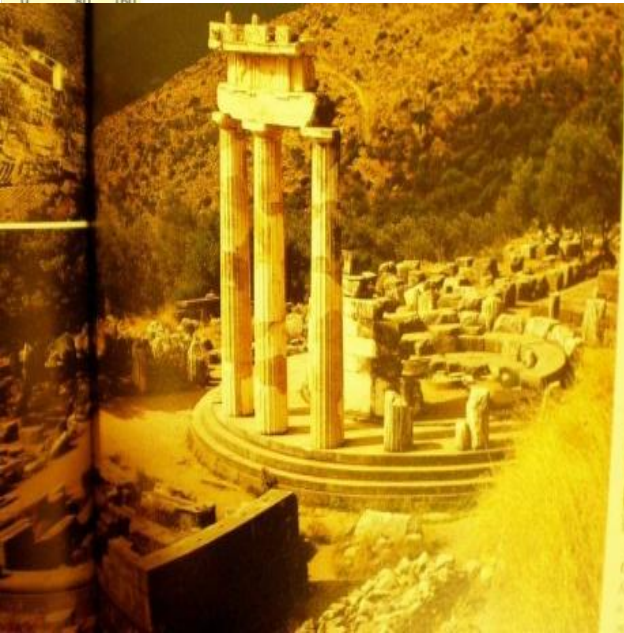
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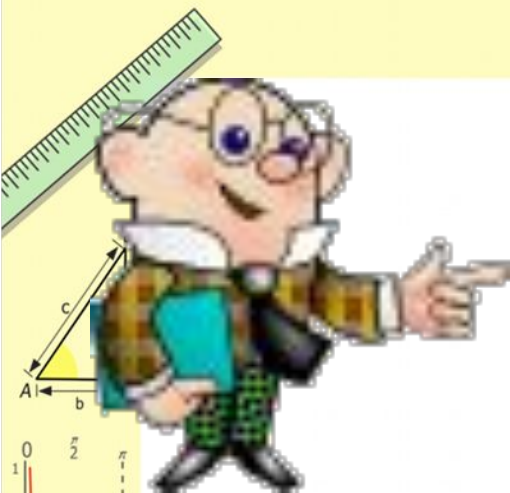
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Осы суреттерден геометриялық бір фигураның көбірек қолданылғанын көріп отырсыңдар. Ол қандай фигура?





**ҰРАНЫМЫЗ:**

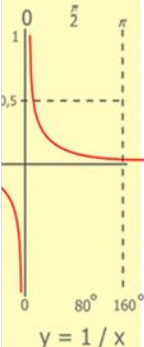
**«БҰЛ МЕНІҢ**

**ҚОЛЫМНАН КЕЛЕТІНІН**

**БІЛЕМІН. ҚАЛАЙ**

**ЖАСАУ КЕРЕКТІГІН**

**БІЛЕМІН»**



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



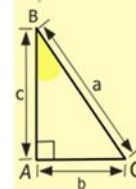
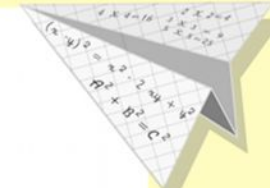
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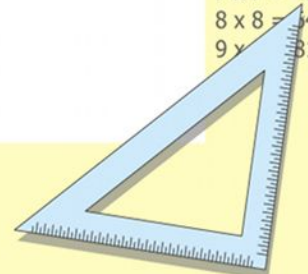


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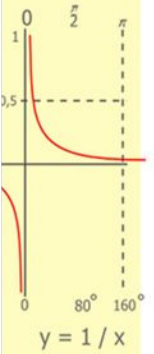
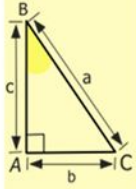
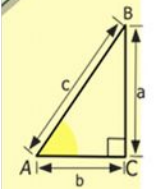
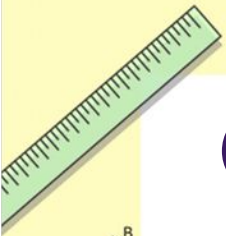


- 2 x 2 = 4
- 3 x 3 = 9
- 4 x 4 = 16
- 5 x 5 = 25
- 6 x 6 = 36
- 7 x 7 = 49
- 8 x 8 = 64
- 9 x 9 = 81





# САБАҚТЫҢ МАҚСАТЫ:



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

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



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

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

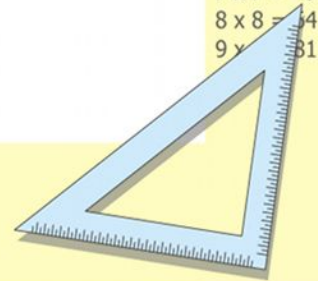
$\sin 90^\circ = 1$



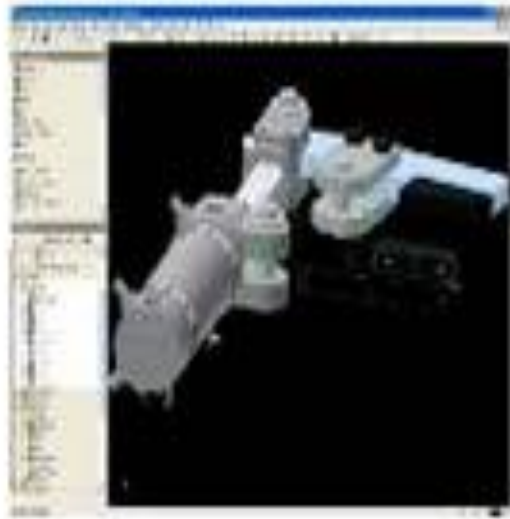
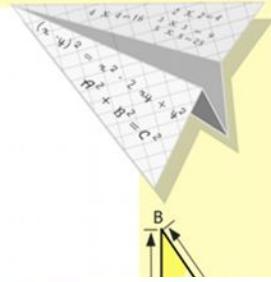
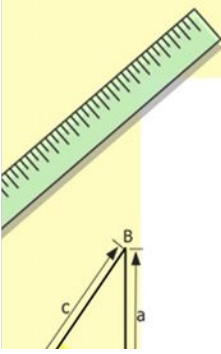
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



# ЦИЛИНДР ТӘРИЗДЕС ФИГУРАЛАРДЫ ӨМІРДЕ ЖИИ КЕЗДЕСТІРЕМІЗ.



$$\begin{array}{r} \times 42 \\ 210 \\ + 84 \\ \hline 1050 \end{array}$$



$$2 \times 2 = 4$$

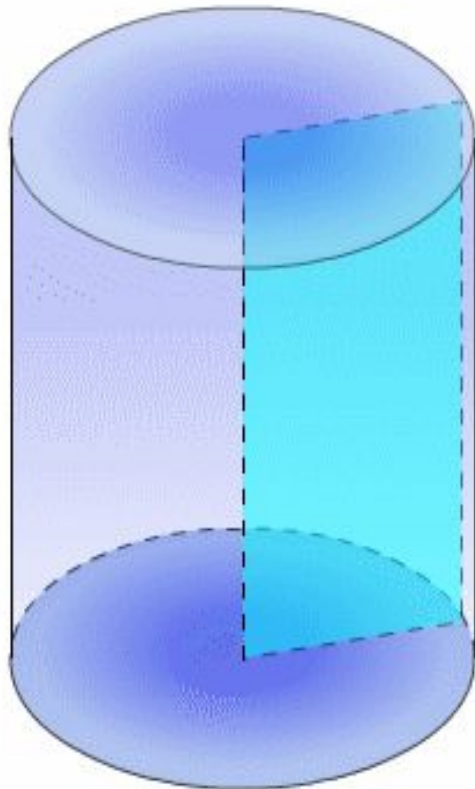


16  
15  
16  
19  
14  
11

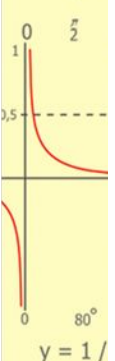
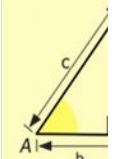
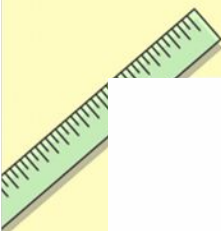
42



# АНЫҚТАМА БЕРІҢДЕР



*Тіктөртбұрышты  
оның бір  
қабырғасын  
қамтитын осьтен  
айналдырғанда  
шығатын фигураны  
цилиндр деп атайды*



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



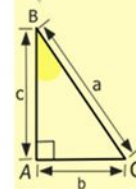
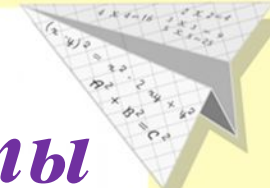
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

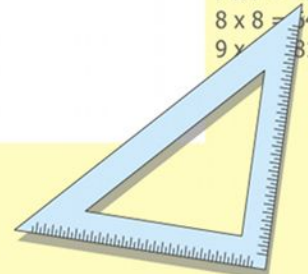


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$
$$\frac{x}{70}$$

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



- 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



радиус (r)

табаны

жасаушы

Бүйір беті

биіктігі

табаны

цилиндр осі

Цилиндрдің бүйір беті -

тік төртбұрыштың осьне параллель қабырғасы жасайтын қисық бет

Жасаушысы

дөңгелектердің сәйкес нүктелерін қосатын кесінділер

Табандары-

тік төртбұрыштың айналуынан шыққан екі дөңгелек

Радиусы -

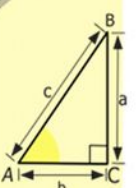
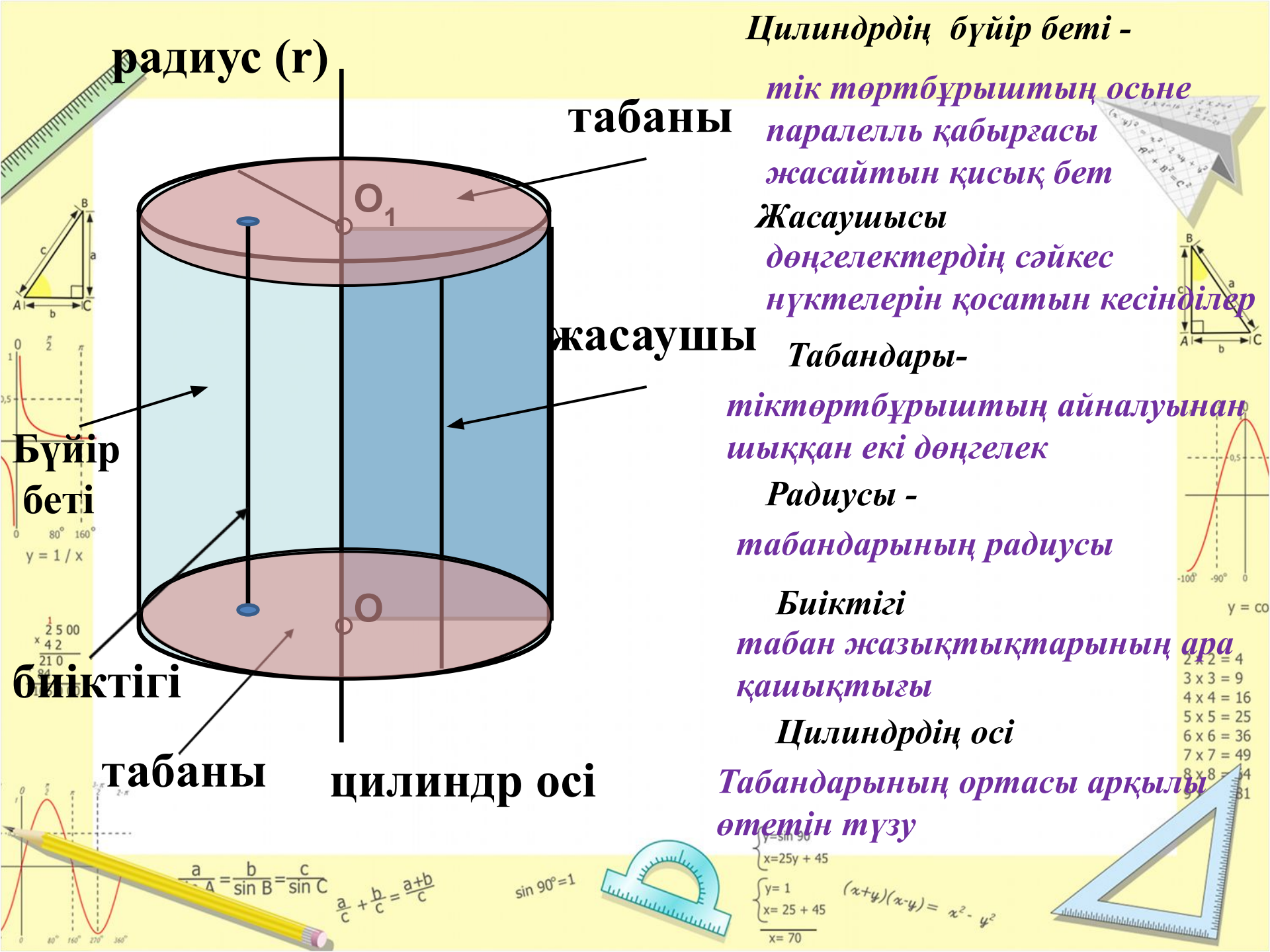
табандарының радиусы

Биіктігі

табан жазықтықтарының ара қашықтығы

Цилиндрдің осі

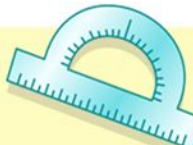
Табандарының ортасы арқылы өтетін түзу



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

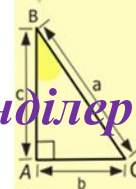
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

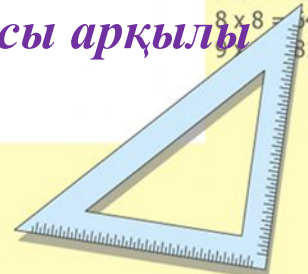


$$\begin{cases} y = \sin 90^\circ \\ x = 25y + 45 \\ y = 1 \\ x = 25 + 45 \\ x = 70 \end{cases}$$

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



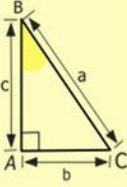
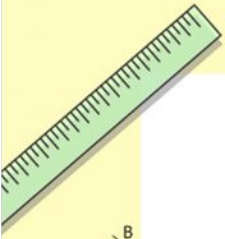
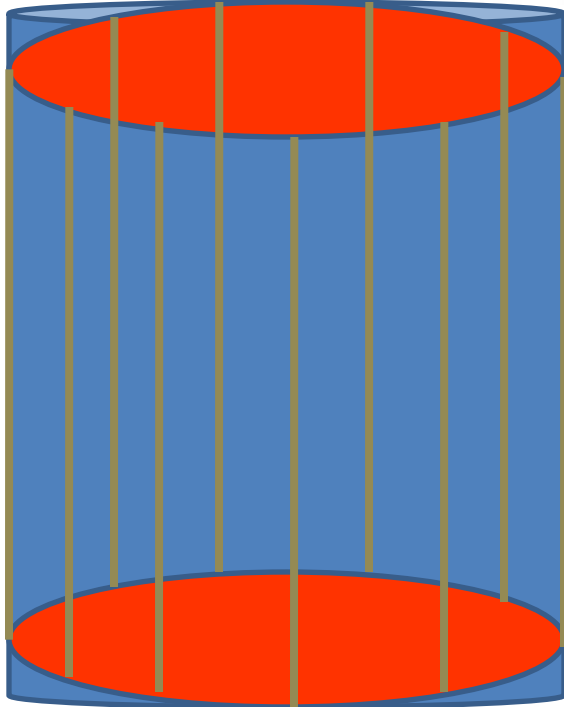
- 2 x 2 = 4
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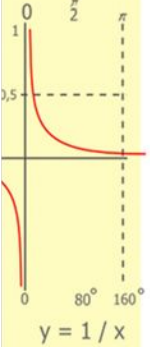
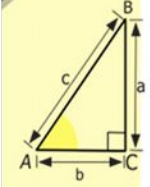
# Цилиндрдің қасиеттері

1) Табандары өзара тең және параллель

2) Жасушалары өзара параллель және бір-біріне тең



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



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



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

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

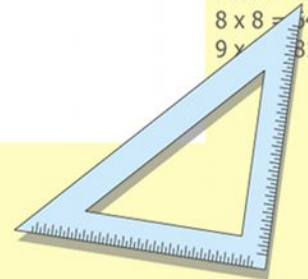
$$\sin 90^\circ = 1$$



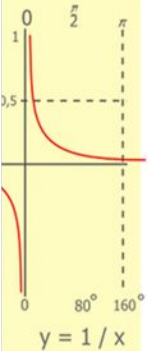
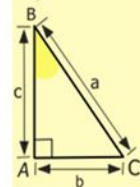
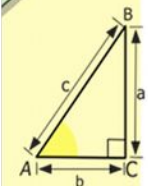
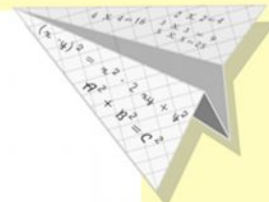
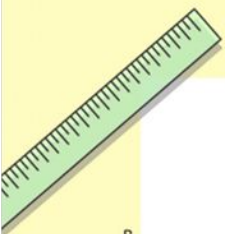
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



# ТІК ЦИЛИНДРДІҢ ҚИМАЛАРЫ



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

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



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

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

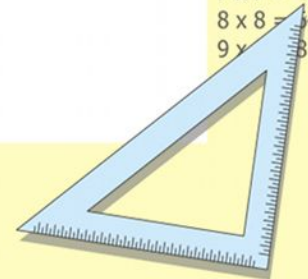
$$\sin 90^\circ = 1$$



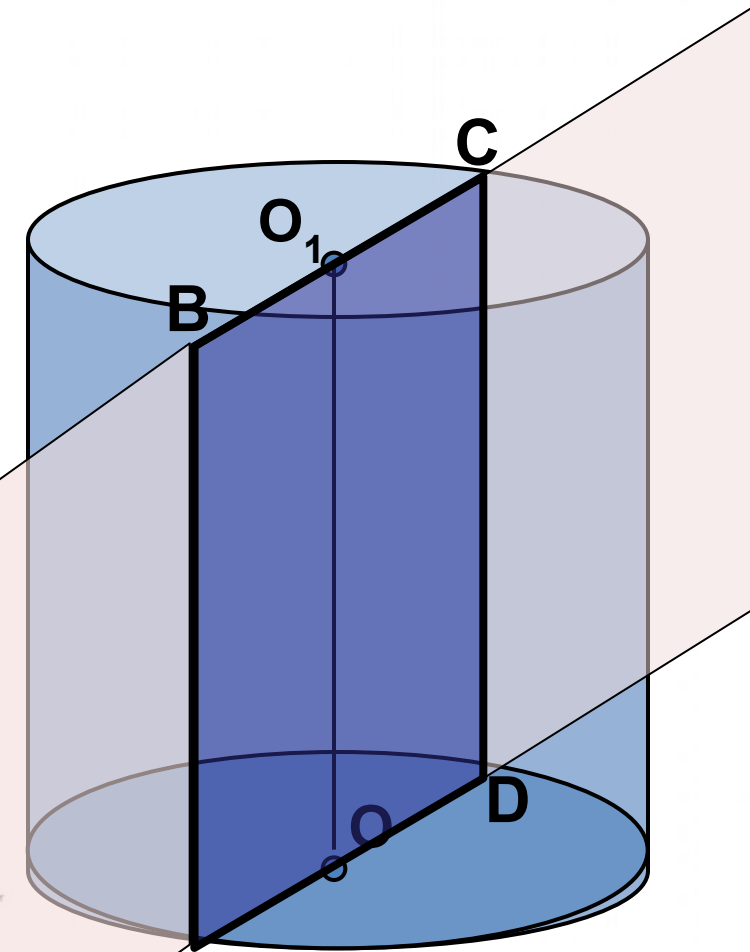
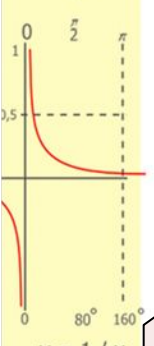
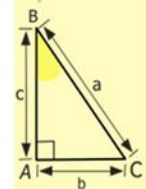
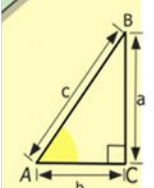
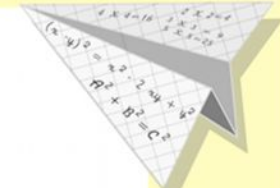
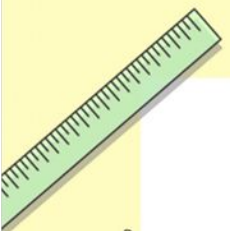
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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







# Цилиндрдің осьтік қимасы

# ТІКТӨРТБҰРЫШ

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

- 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

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

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

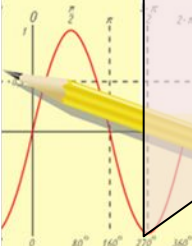
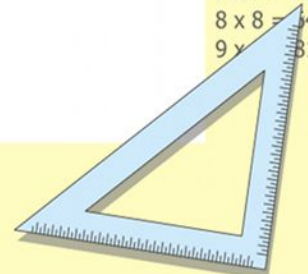
$$\sin 90^\circ = 1$$



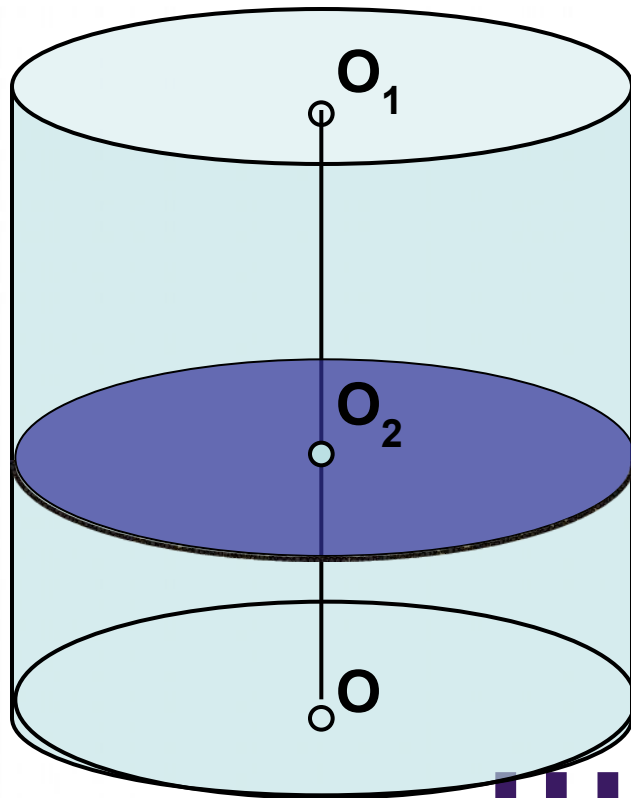
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

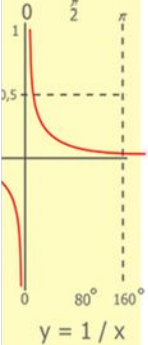
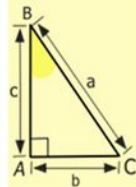
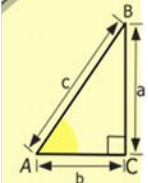
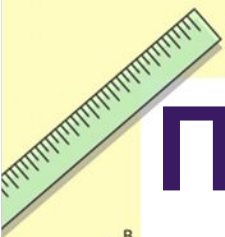
$$(x+y)(x-y) = x^2 - y^2$$



# ЦИЛИНДРДІҢ ОСІНЕ ПЕРПЕНДИКУЛЯР ҚИМАСЫ



## ШЕҢБЕР



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

- 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



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

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

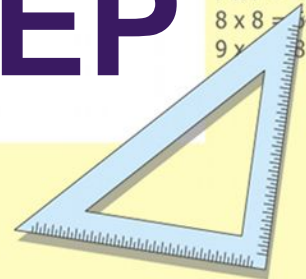
$$\sin 90^\circ = 1$$



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

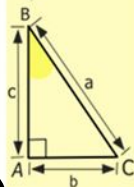
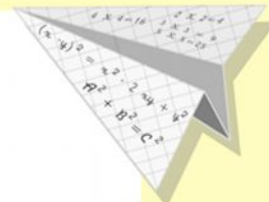
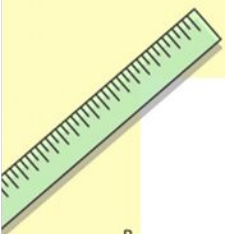
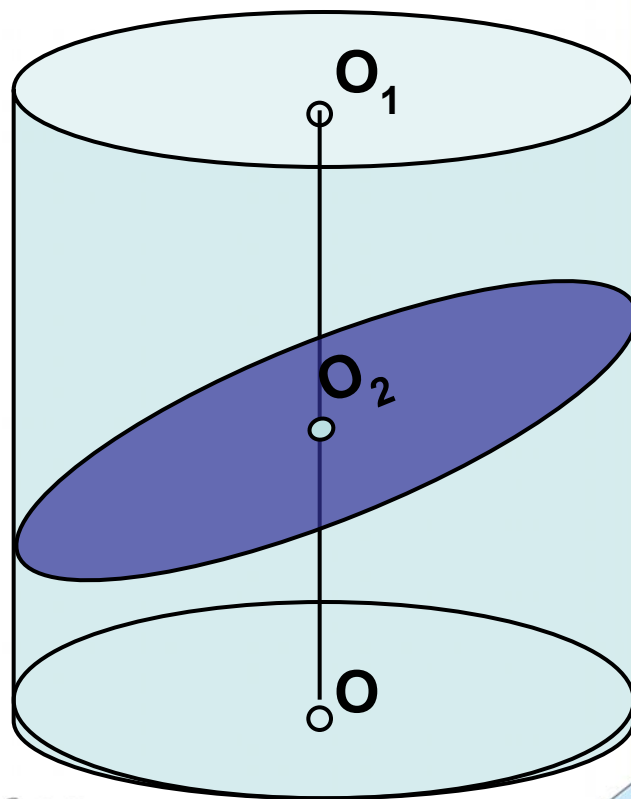
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



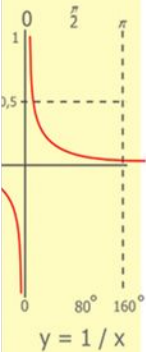
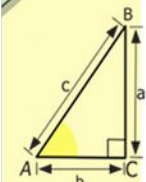
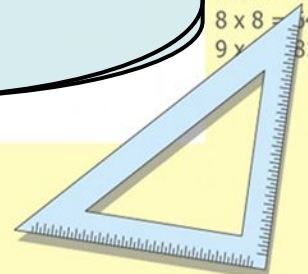
# Осіне көлбеу жазықтықпен қию

# ЭЛЛИПС



$y = \cos$

- 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



$y = 1/x$

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



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

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

$\sin 90^\circ = 1$



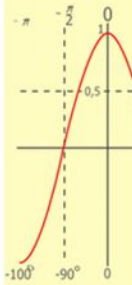
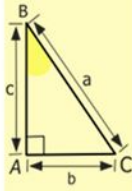
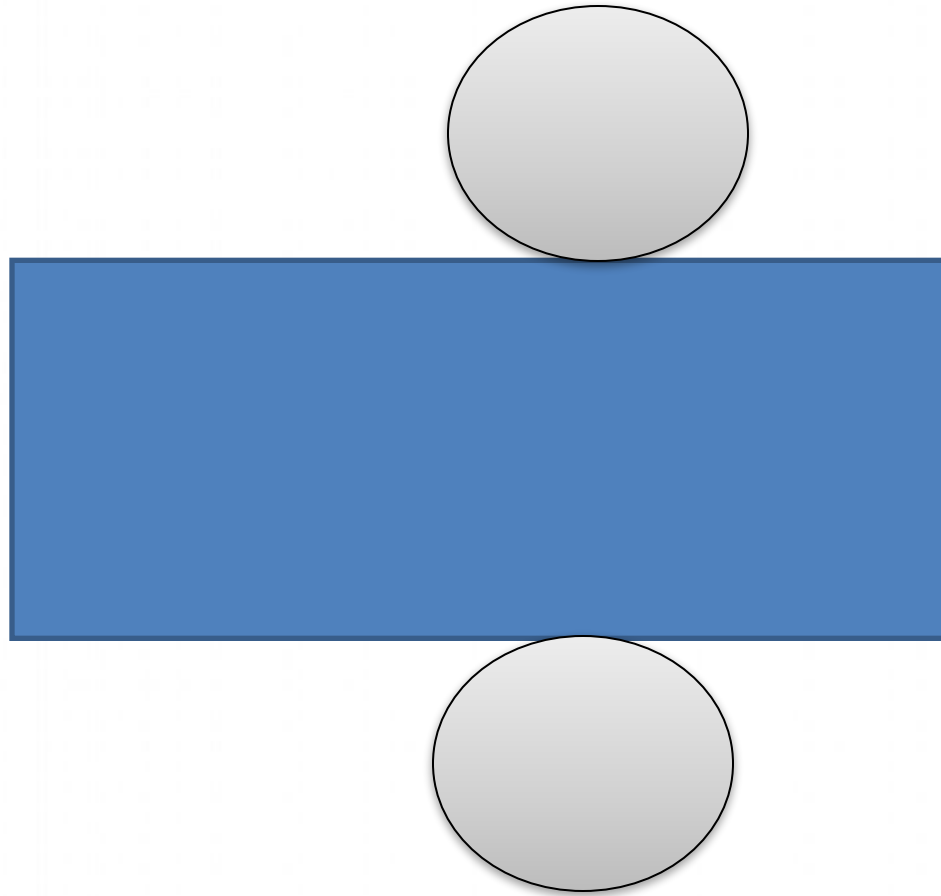
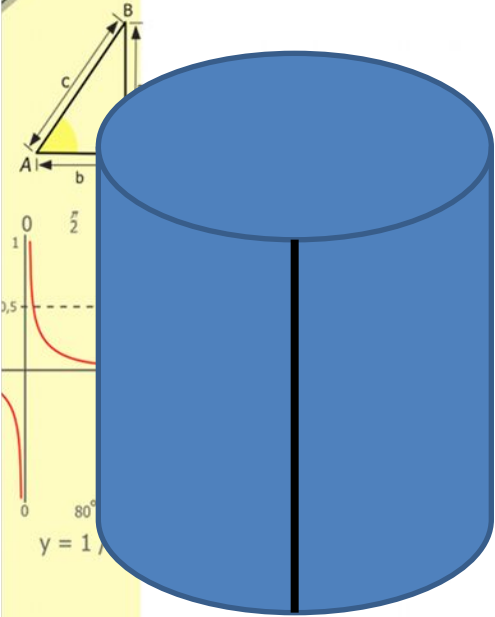
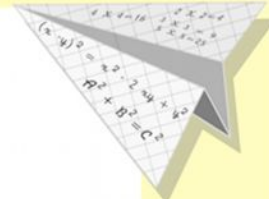
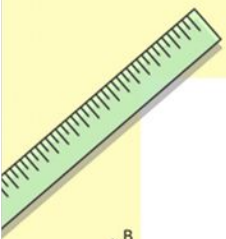
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$x = 70$

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

# ЦИЛИНДРДІҢ ЖАЗБАСЫ ЖӘНЕ БЕТІНІҢ АУДАНЫ



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

- 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



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

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

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

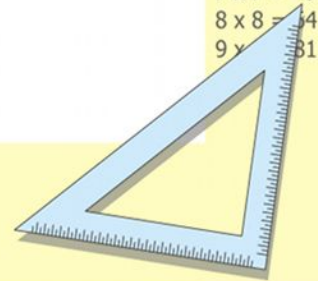


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

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





# ЦИЛИНДРДІҢ АУДАНЫ

## Самандық жұмыс

### Мақсаты:

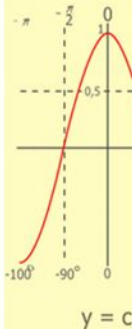
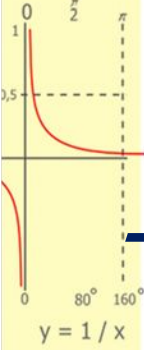
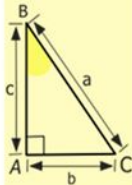
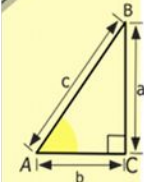
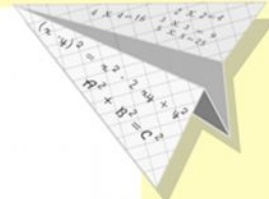
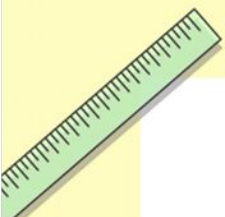
оқушылар өз беттерімен формуланы қорытып шығарады :

-Цилиндрдің бүйір бетінің ауданы

$$(S_{бб});$$

-Цилиндрдің толық бетінің ауданы

$$(S_{тб}).$$



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

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



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

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

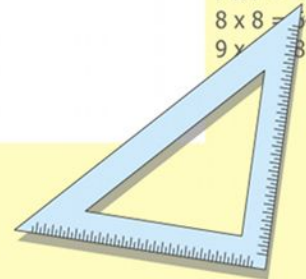
$$\sin 90^\circ = 1$$



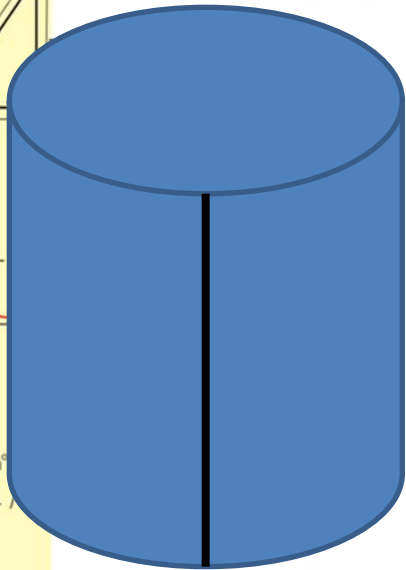
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



# ЦИЛИНДРДІҢ ЖАЗБАСЫ ЖӘНЕ БЕТІНІҢ АУДАНЫ



$$S = \pi r^2$$

$$S_{\text{ц.б.б.}} = 2\pi R H$$

$$S = \pi r^2$$

$$S_{\text{ц.м.б.}} = 2\pi R H + 2\pi R^2$$

немесе

$$S_{\text{ц.м.б.}} = 2\pi R(H + R)$$

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

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

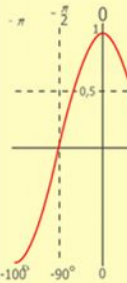
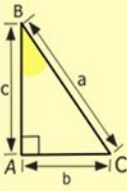
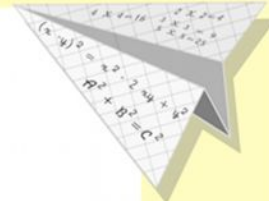
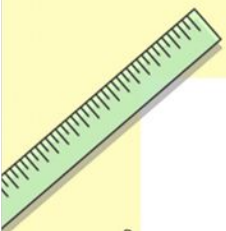
$$\sin 90^\circ = 1$$

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

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

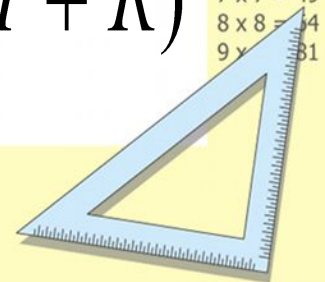
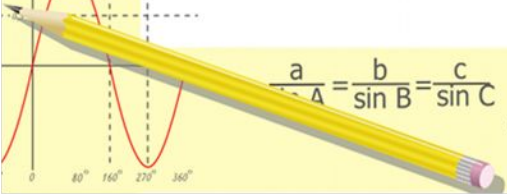
$$x = 70$$

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



y = co

- 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



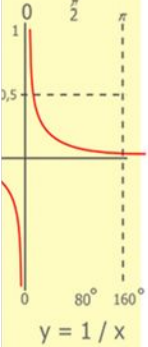
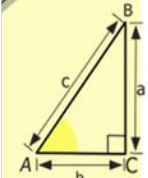
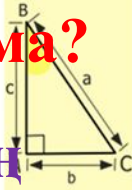
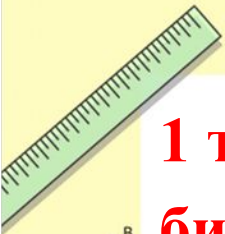
# Есеп шығару:

**1 топ** Цилиндр тәрізді бөшкенің радиусы 0,6 м және биіктігі 1,6 м. Бөшке биіктігі 1,9 м-ге тең бөлменің еденінде тұр. Бөшкені осы бөлмеден домалатып шығаруға бола ма?

**2 топ** цилиндрің радиусы 3 см, биіктігі 8 см, цилиндрдің осьтік қимасы диагональдың ұзындығын табыңдар.

**3 топ** Тіктөртбұрыштың қабырғалары 4 см және 5 см. Тіктөртбұрыш кіші қабырғасынан айналғанда шыққан дененің толық бетінің ауданан табығын

**4 топ** Цилиндрдің ауданы және бүйір бетінің ауданы  $50\text{ см}^2$  және  $30\text{ см}^2$ -тең. Цилиндрің радиусы мен биіктігін табыңдар



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



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

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

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



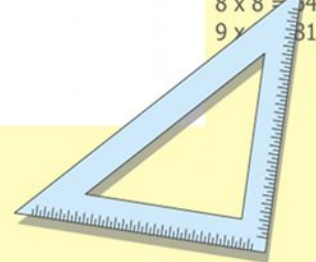
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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

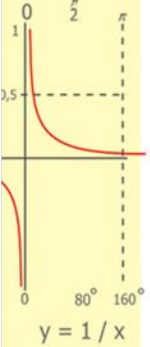
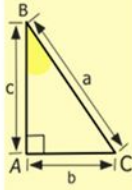
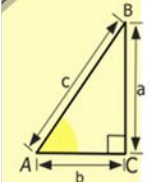
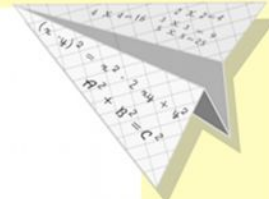
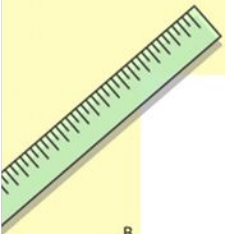
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64
9 x 9 = 81



# Сергію сәті



# ІСКЕРЛІК ОЙЫН



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

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



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

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

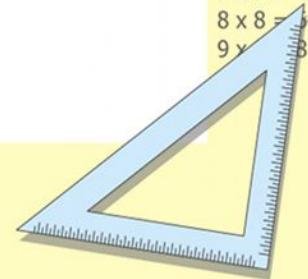
$$\sin 90^\circ = 1$$



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

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

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





«ҚазМұнайГаз»



**ҚазМұнайГаз**  
NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

Ұлттық компаниясы

«ҚазТранс Ойл»



Акционерлік қоғамы

«ПетроҚазақстан»



Акционерлік қоғамы

Жабдықтаушы компания

«МұнайСервис»

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

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

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

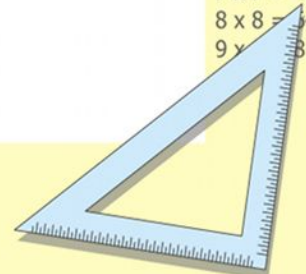


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

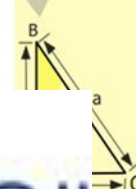
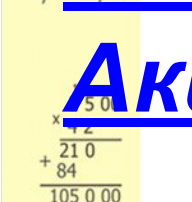
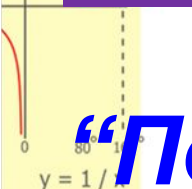
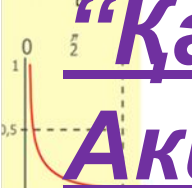
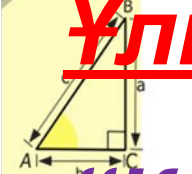
$$\begin{cases} y = 1 \\ x = 25 + 45 \end{cases}$$

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

$$x = 70$$



- 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

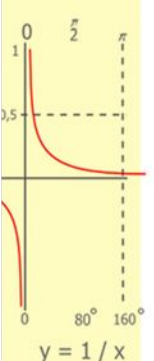
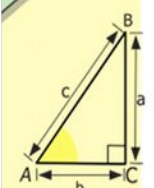


$$y = \cos$$



**ҚазМұнайГаз**  
NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

**Газ және мұнай құбырларын төсеушілер пайдалану ережелерін қатаң сақтай отырып, құбырлар шірімеу үшін құбыр сыртын арнайы екі қабаттап пленкамен орайды.**



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



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

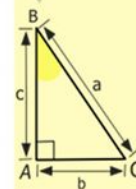
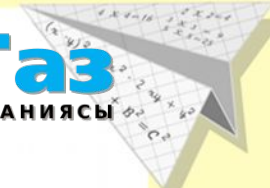
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

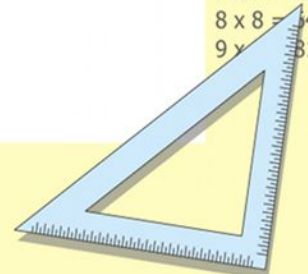


$$\begin{cases} x = 2y + 45 \\ y = 1 \end{cases} \Rightarrow \begin{cases} x = 25 + 45 \\ x = 70 \end{cases}$$

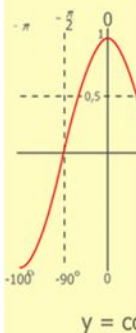
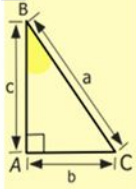
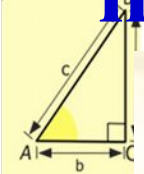
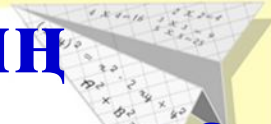
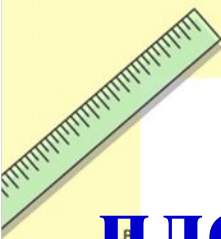
$$(x+y)(x-y) = x^2 - y^2$$



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



**Егер құбырдың диаметрі 154 см, ұзындығы 5 км болса, құбырдың пленкамен оралатын ауданы табындар?**



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

- 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



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

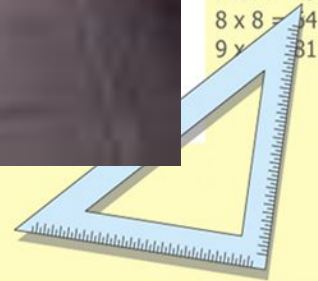
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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



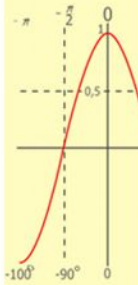
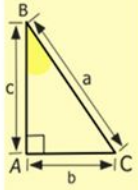
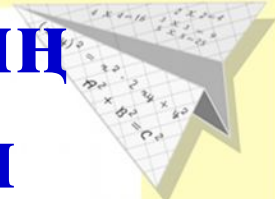
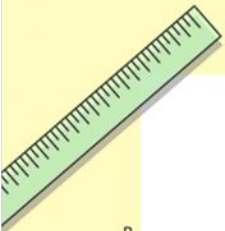
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



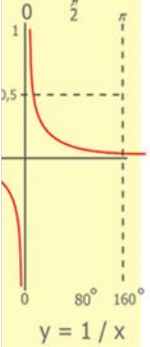
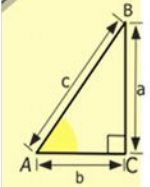


# Егер құбырдың диаметрі 76 см, ұзындығы 5 км болса, құбырдың пленкамен оралатын ауданын табындар?



$$y = \cos$$

- 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



$$\begin{array}{r} 1 \\ \times 2500 \\ \hline 2500 \\ \times 42 \\ \hline 2100 \\ + 840 \\ \hline 105000 \end{array}$$



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

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

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

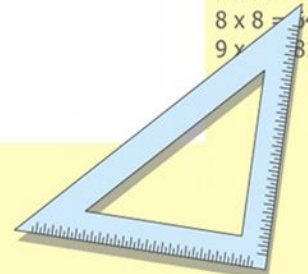


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

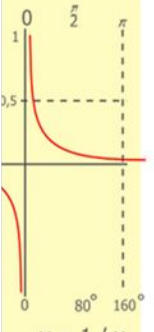
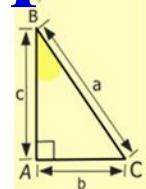
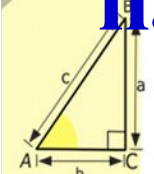
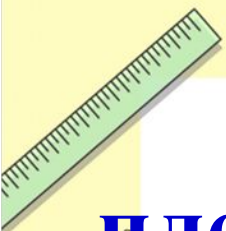
$$x = 70$$

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





Егер құбырдың диаметрі 168 см,  
 ұзындығы 5 км болса, құбырдың  
 пленкамен оралатын ауданы табындар?



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

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



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

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

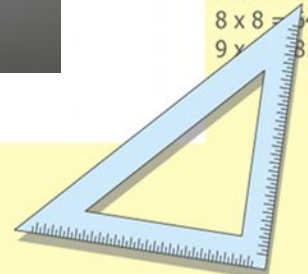
$\sin 90^\circ = 1$



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

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

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



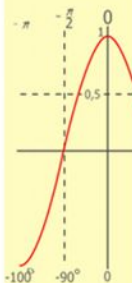
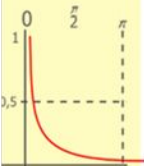
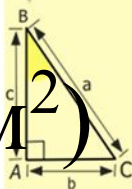
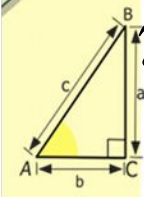
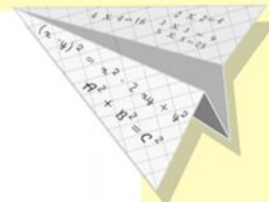
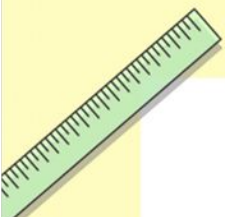
# Шешуі:

$$\pi = 3,14$$

$$S_{\text{бб}} = 2\pi R H = \pi d H = 3,14 \cdot 1,54 \cdot 5000 = 24178 (\text{м}^2)$$

Құбырды екі қабаттап қаптау үшін  
 $24178 \cdot 2 = 48356 (\text{м}^2)$  пленка қажет

**Жауабы:**  $48356 \text{ м}^2$



$$y = 1/x$$

$$y = \sin x$$

$$\begin{array}{r} 12500 \\ \times 42 \\ \hline 2100 \\ + 8400 \\ \hline 105000 \end{array}$$

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



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

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

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

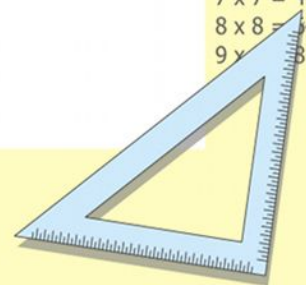


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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



# Шешуі:

$$\pi = 3,14$$

$$S_{\text{бб}} = 2\pi R H = \pi d H = 3,14 \cdot 0,76 \cdot 5000 = 11932 (\text{м}^2)$$

Құбырды екі қабаттап қаптау үшін  
 $11932 \cdot 2 = 23864 (\text{м}^2)$

пленка қажет

**Жауабы:**  $23864 \text{ м}^2$

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

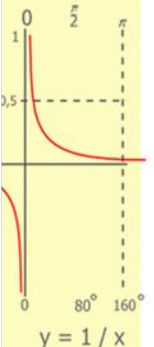
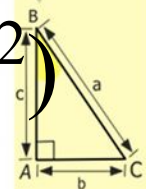
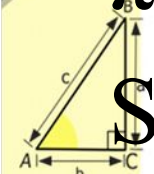
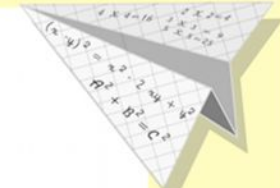
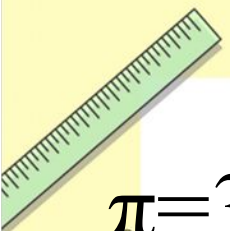
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$

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

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

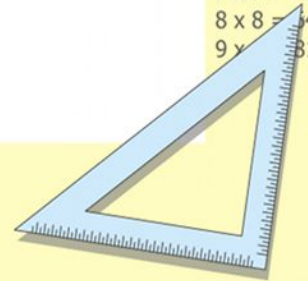
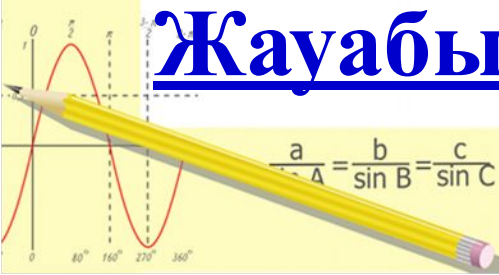
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



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

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



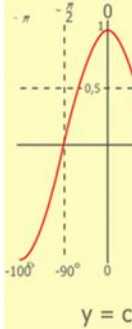
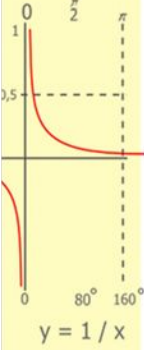
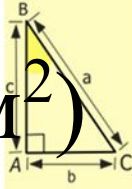
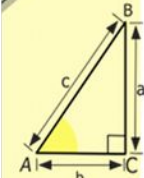
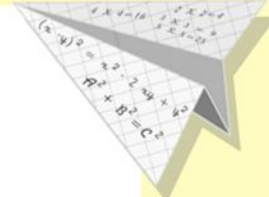
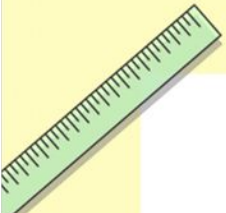
# Шешуі:

$$\pi = 3,14$$

$$S_{\text{бб}} = 2\pi R H = \pi d H = 3,14 \cdot 1,68 \cdot 5000 = 26376 (\text{м}^2)$$

Құбырды екі қабаттап қаптау үшін  
 $26376 \cdot 2 = 52752 (\text{м}^2)$  пленка қажет

**Жауабы:** 52752 м<sup>2</sup>



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

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



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

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

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

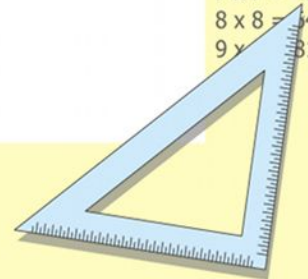


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

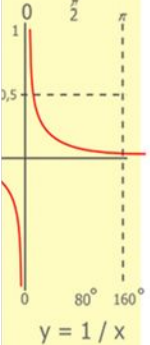
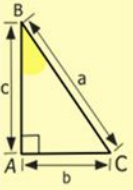
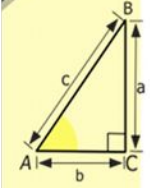
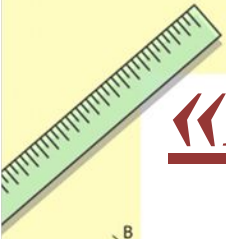
$$(x+y)(x-y) = x^2 - y^2$$





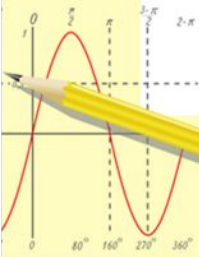
# «МұнайСервис» жабдықтаушы компаниясының есебі

Егер 1 орамада 3000 м<sup>2</sup> пленка болса, әр компанияға қанша орама пленка қажет?



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

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



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

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

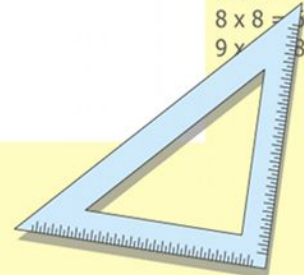
$$\sin 90^\circ = 1$$



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

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

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



# Шешімі:

ҚазМұнайГаз

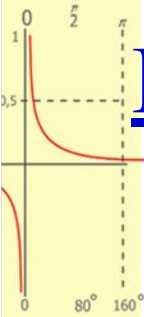
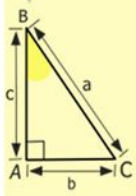
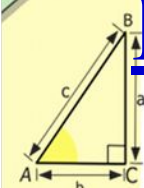
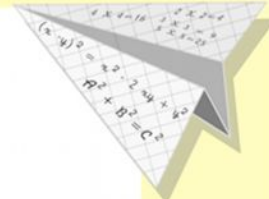
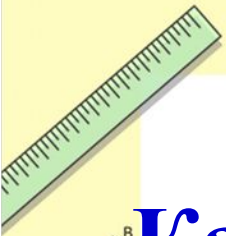
$$48356:3000=16,12 \text{ (орама)}$$

ҚазТрансОйл

$$23864:3000=7,95 \text{ (орама)}$$

ПетроҚазакстан

$$52752:3000=17,6 \text{ (орама)}$$



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

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

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

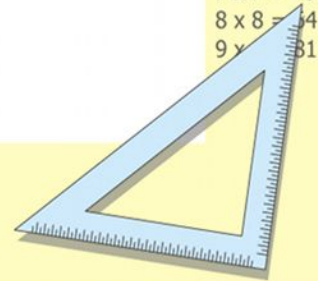
$$\sin 90^\circ = 1$$



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

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

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



# БЛИЦ-ТЕСТ

1. Цилиндрдің табаны радиусы 2 см, биіктігі 5 см болса бүйір беті ауданы тап

- A) 40 п      B) 10 п      C) 20 п      D) 4 п

2. Табаны диаметрі 4 см, биіктігі 3 см болса цилиндрдің бүйір беті ауданы тап

- A) 40п      B) 10п      C) 12 п      D) 16 п

3. Тік цилиндрдің табанының радиусы 4 см-ге тең жасаушысынан 2 есе кем болса бүйір бетінің ауданы қанша?

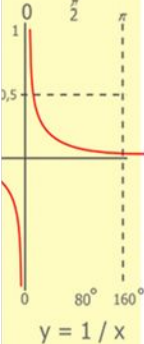
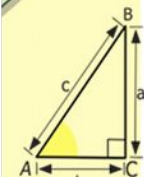
- A) 16 п      B) 32 п      C) 12 п      D) 48 п

4. Егер цилиндрдің бүйір беті ауданы  $64 \text{ м}^2$  ал биіктігі 4 метр болса табан радиусын тап

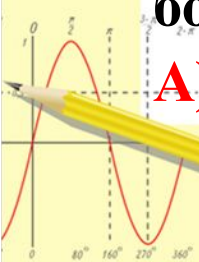
- A) 16/п      B) 8/п      C) 26/п      D) 18/п

5. Егер цилиндрдің осьтік қимасы қабырғалары 12 және 8 см болатын тік төртбұрыш болса бүйір беті ауданы тап

- A) 36 п      B) 64 п      C) 48 п      D) 96 п



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



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

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

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

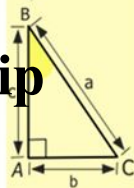


$$\begin{cases} y = 25y + 45 \\ x = 25y + 45 \end{cases}$$

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

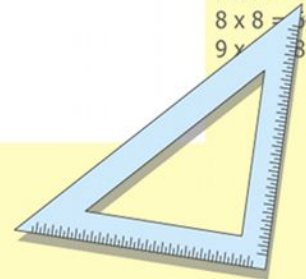
$$x = 70$$

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



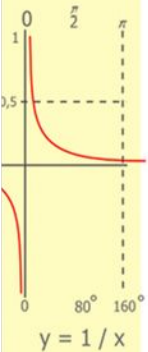
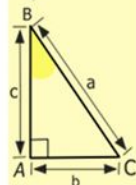
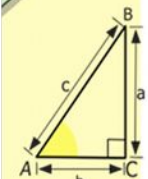
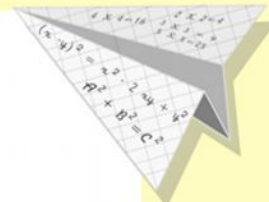
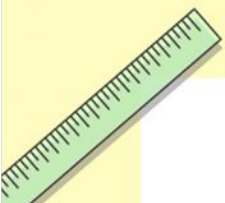
$$y = \cos$$

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



# БАҒАЛАУ

Р/ С	Оқушы ның аты- жөні	Теориялық білім	Практикалық жұмыс	есеп шығару	Іскерлік ойын	Блиц-тест	Сыни көзқарас	Топқа қосқан үлесі	Топ ережесін сақтауы	Дәптерінің тазалығы	Жалпы бал	Орташа бал	Қорытынды баға
1													



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

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



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

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

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

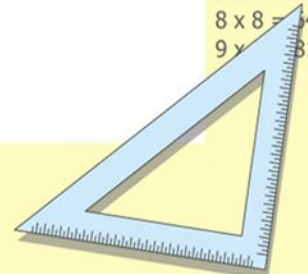


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

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





# Үй тапсырмасы

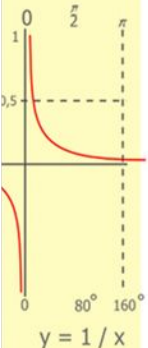
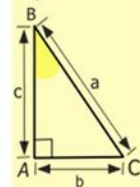
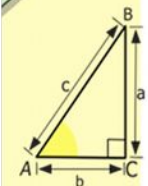
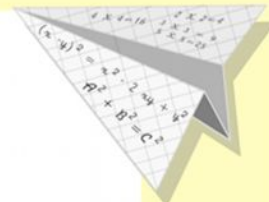
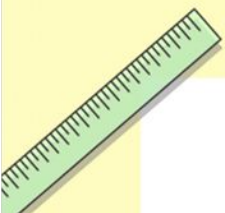
П. 10

№ 4 есеп

ЖОБА ЖАСАУ.

Тақырыбы:

«Цилиндрлік архитектура»



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

- 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



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

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

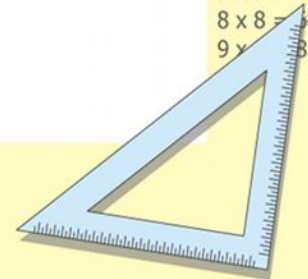
$$\sin 90^\circ = 1$$



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

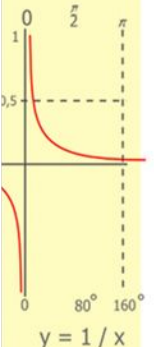
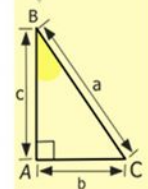
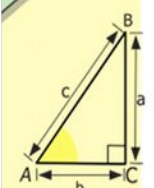
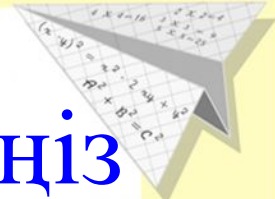
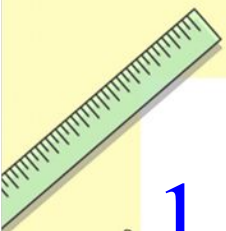
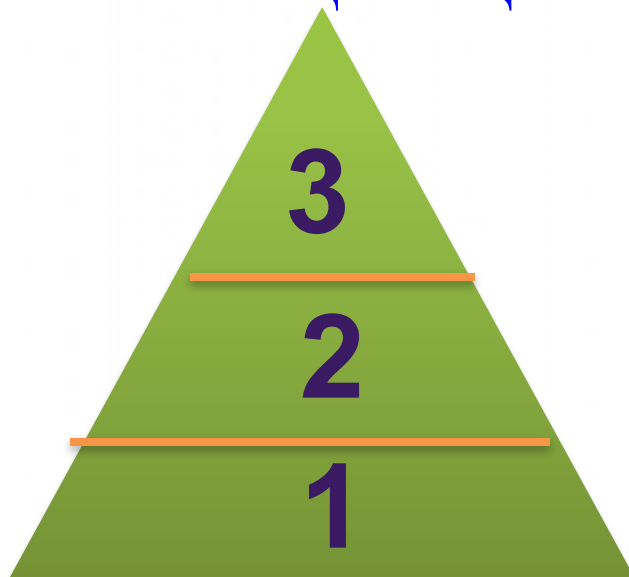
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



# РЕФЛЕКСИЯ

1. Келесі сабақта істейтін әрекетіңіз немесе сұрағыңыз
2. Сізге әсер еткен екі сөз
3. Бүгінгі сабақтың маңызды үш сөз



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

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



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

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

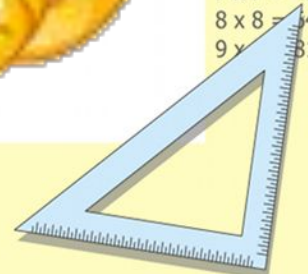
$$\sin 90^\circ = 1$$



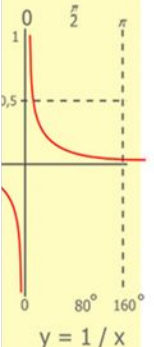
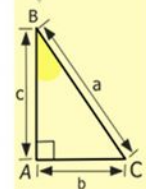
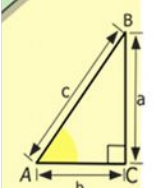
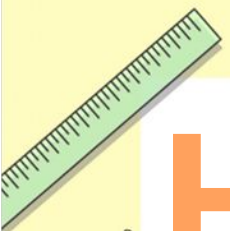
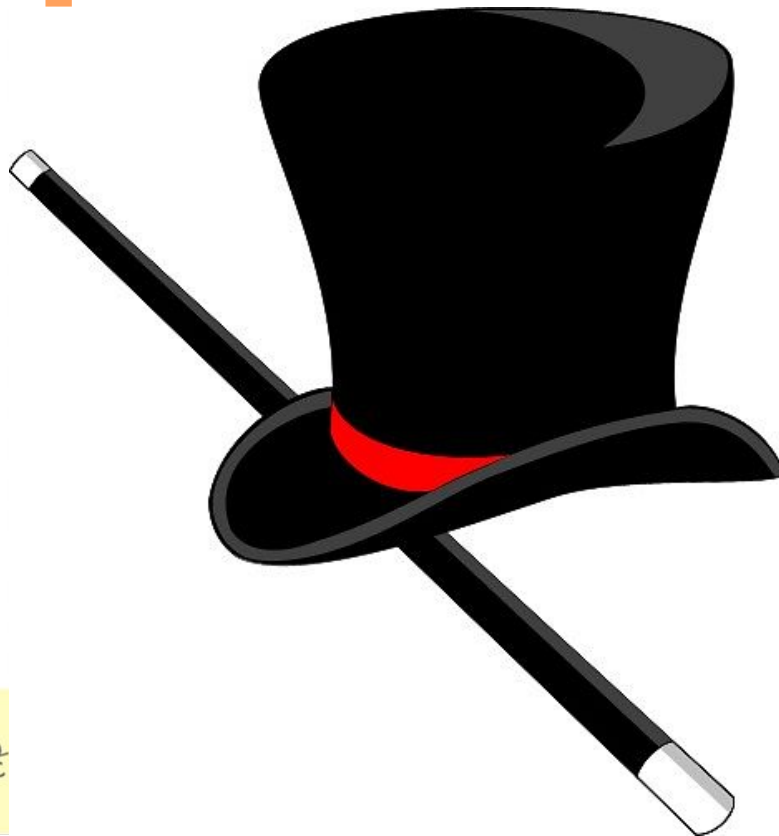
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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



# Назарларыңызға рахмет!



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

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



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

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

