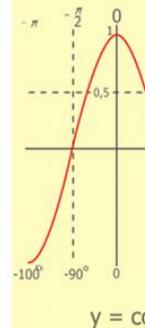
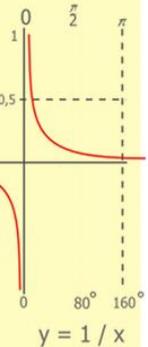
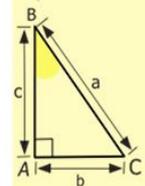
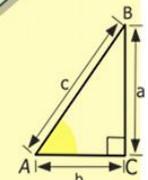
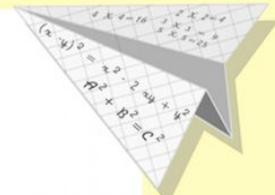
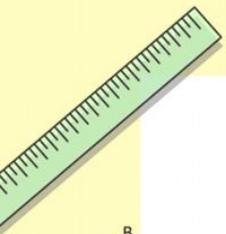
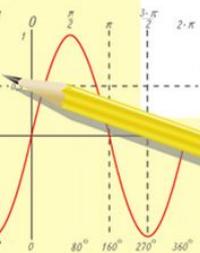


# Свойство диаметра окружности. Взаимное расположение прямой и окружности.



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

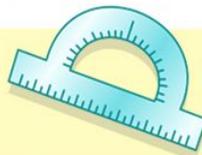
- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$
- $9 \times 9 = 81$



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

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

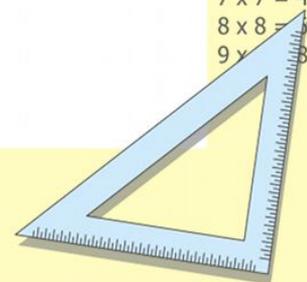
$$\sin 90^\circ = 1$$



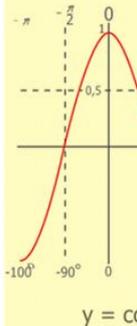
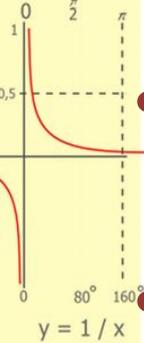
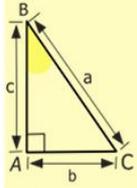
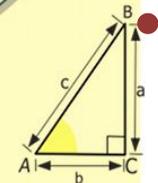
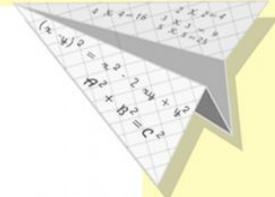
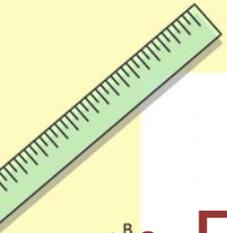
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

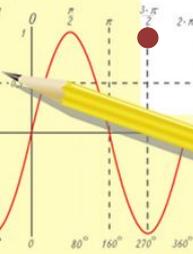


# Цели урока



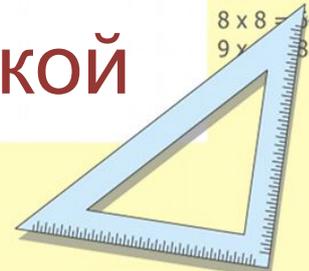
$$\begin{array}{r} \frac{1}{2} 5\ 00 \\ \times 42 \\ \hline 21\ 0 \\ + 84\ 0 \\ \hline 105\ 0\ 00 \end{array}$$

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



$$\frac{b}{a} = \frac{\sin B}{\sin A} = \frac{c}{\sin C}$$
$$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$$
$$\sin 90^\circ = 1$$

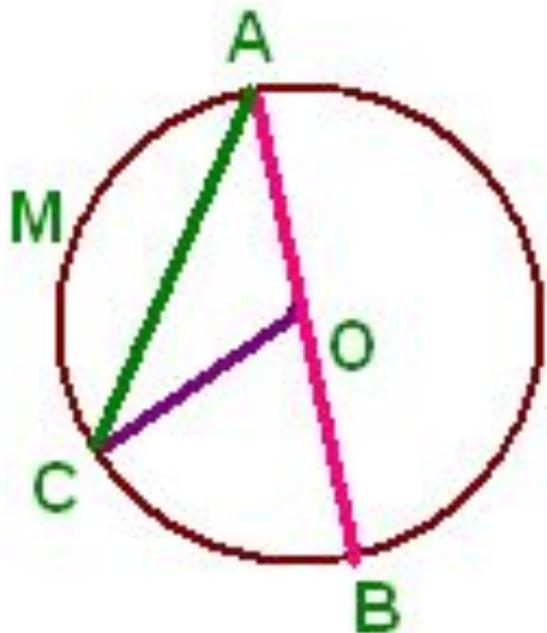
$$\begin{cases} y = \sin 90 \\ y = 25y + 15 \\ y = 1 \\ x = 25 + 45 \\ x = 70 \end{cases}$$
$$(x+y)(x-y) = x^2 - y^2$$



- Рассмотреть различные случаи взаимного расположения прямой и окружности;
- Доказать свойство диаметра окружности;
- Совершенствовать навыки решения задач;
- Развитие логического мышления, навыков самоконтроля;
- Воспитание культуры математической речи, уважительного отношения к мнению окружающих.

# Определение окружности, ее основных элементов

Окружность – геометрическая фигура, состоящая из всех точек плоскости, расположенных на заданном расстоянии от данной точки.



Дайте определение

- диаметра,
- радиуса,
- хорды,

Найдите их на рисунке.

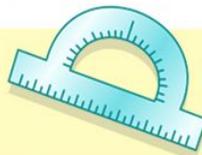
Назовите формулу, связывающую радиус и диаметр окружности.

$CO = 3,7$  м. Найти  $AB$

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

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

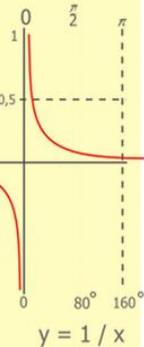
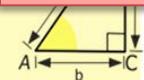
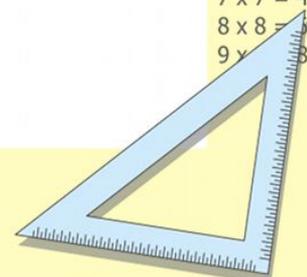
$$\sin 90^\circ = 1$$



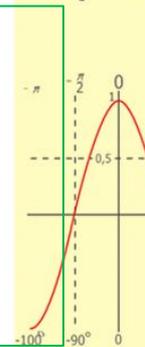
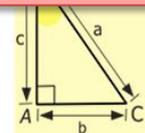
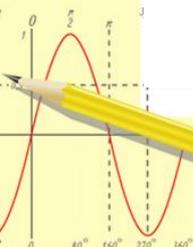
$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

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

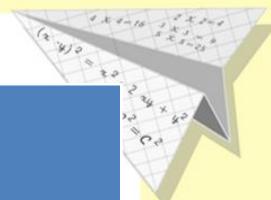
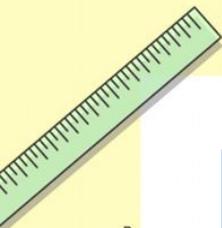


$$\begin{array}{r} 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$

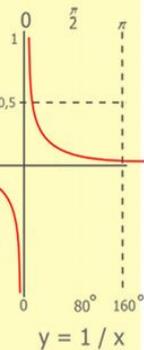
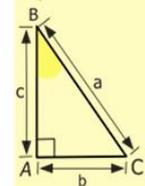
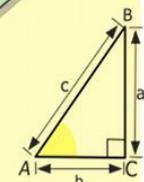


$$y = \cos$$

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

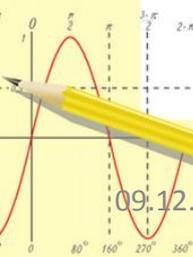


№ вопроса	Вариант 1	Вариант 2
3	в)	а)
4	б)	в)
5	OB; OA; OD; OC	BC; AD
6	MK; NK; AB	OM; OA; OD; OK; OB
7	в)	в)
8	б); $R=d:2$	а); $d=2 \cdot R$



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

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



09.12.2012

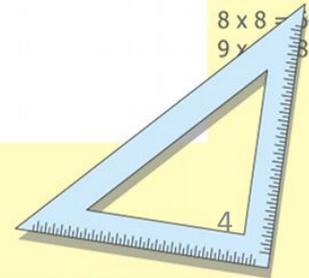
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

Обр. Л.В. Фрязино  
 МОУ СОШ №4, г. Фрязино

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

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



# Свойство диаметра окружности

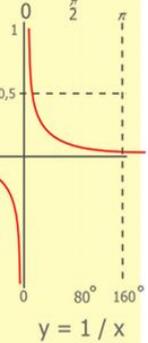
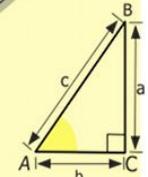
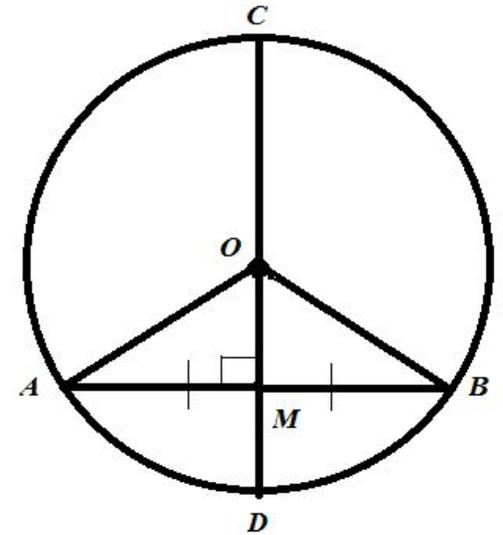
Диаметр окружности, перпендикулярный хорде, делит эту хорду пополам.

Дано: окружность,  $CD \perp AB$

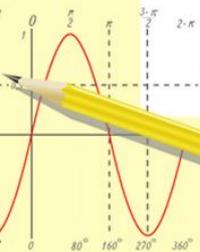
Доказать:  $M$  – середина  $AB$

Доказательство:

1. Проведем радиусы  $OA$  и  $OB$ .
2. Треугольник  $AOB$  равнобедренный.
3.  $OM$  – высота проведенная к основанию,  $OM$  – медиана.



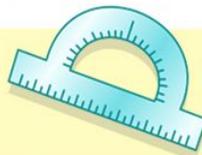
$$\begin{array}{r} 1 \\ 2500 \\ \times 42 \\ \hline 210 \\ + 84 \\ \hline 10500 \end{array}$$



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

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

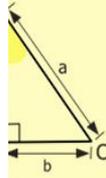
$$\sin 90^\circ = 1$$



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

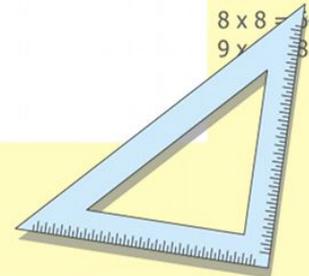
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



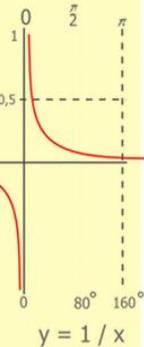
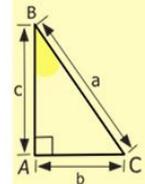
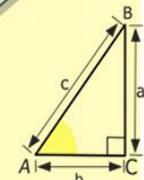
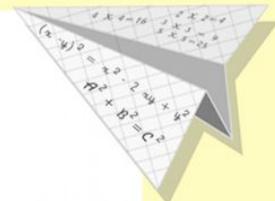
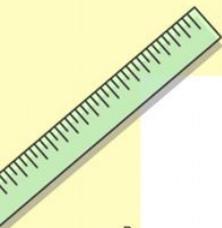
$$y = \cos$$

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



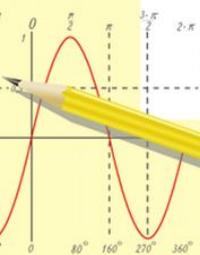
# Работа с учебником:

№ 511 Устно;  
№ 520



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

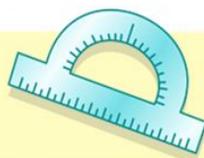
- 2 x 2 = 4
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- 6 x 6 = 36
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- 8 x 8 = 64
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$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

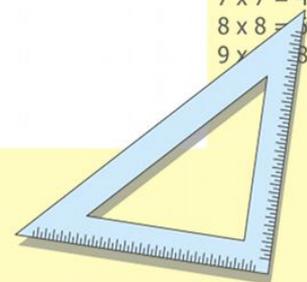
$$\sin 90^\circ = 1$$



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

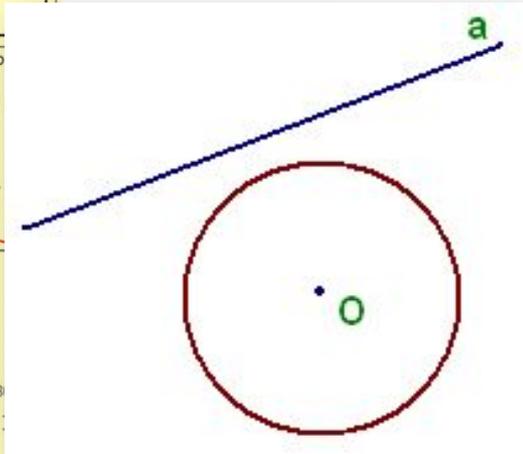
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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

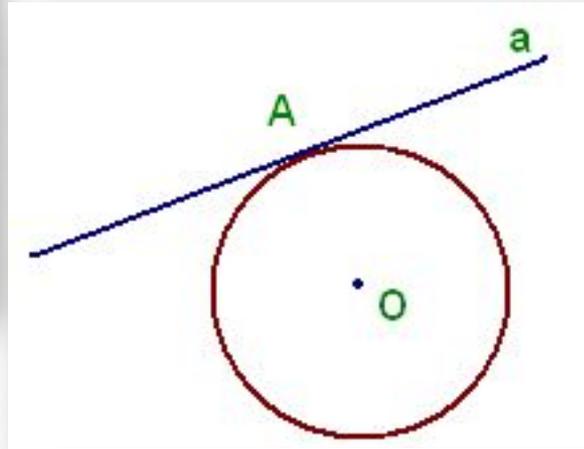


# Взаимное расположение прямой и окружности:

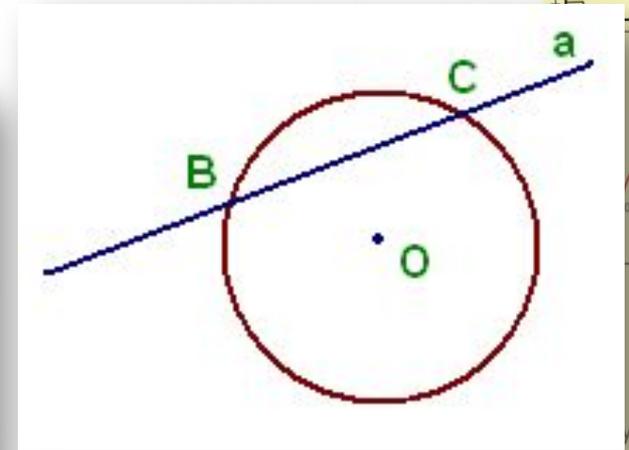
Сколько общих точек могут иметь прямая и окружность, лежащие в одной плоскости?



Нет общих точек



а - касательная  
Одна общая точка –  
точка касания

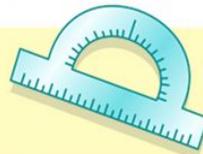


а - секущая  
Две общие точки –  
точки пересечения

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

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

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

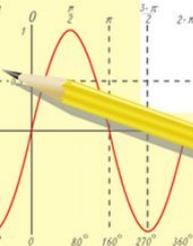
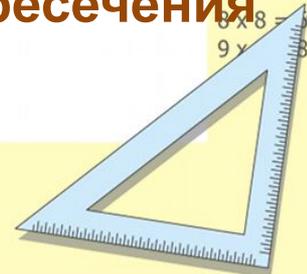


$$\begin{cases} y = \sin 90 \\ x = 25y + 45 \end{cases}$$

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

$$x = 70$$

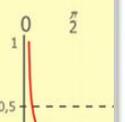
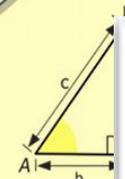
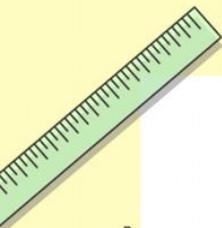
$$(x+y)(x-y) = x^2 - y^2$$



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

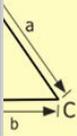
$$\begin{array}{l} 2 \times 2 = 4 \\ 3 \times 3 = 9 \\ 4 \times 4 = 16 \\ 5 \times 5 = 25 \\ 6 \times 6 = 36 \\ 7 \times 7 = 49 \\ 8 \times 8 = 64 \\ 9 \times 9 = 81 \end{array}$$

# Искры летят по касательной



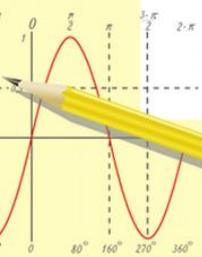
$y = 1 /$

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



$y = \cos$

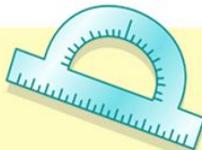
- = 4
- = 9
- = 16
- = 25
- = 36
- 7 x 7 = 49
- 8 x 8 = 64
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$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

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

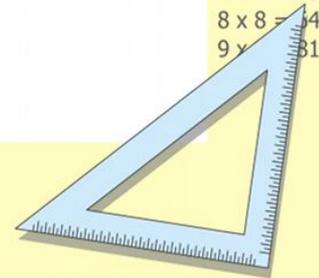
$\sin 90^\circ = 1$



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

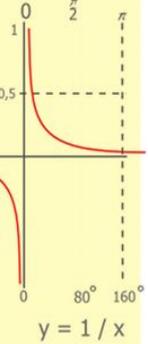
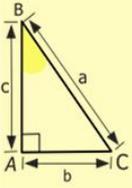
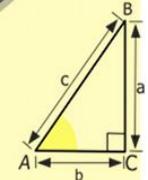
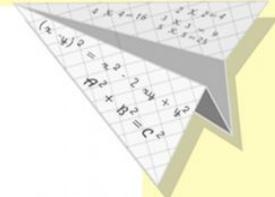
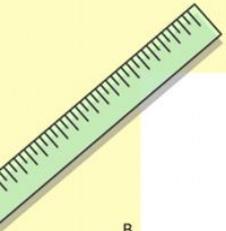
$$\begin{cases} y = 1 \\ x = 25 + 45 \\ \hline x = 70 \end{cases}$$

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



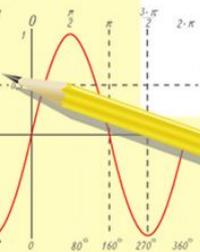
# ИТОГИ УРОКА

## Домашнее задание: № 522, п. 20



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

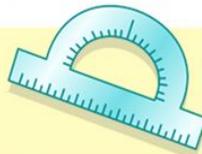
- $2 \times 2 = 4$
- $3 \times 3 = 9$
- $4 \times 4 = 16$
- $5 \times 5 = 25$
- $6 \times 6 = 36$
- $7 \times 7 = 49$
- $8 \times 8 = 64$
- $9 \times 9 = 81$



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

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

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



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

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

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

