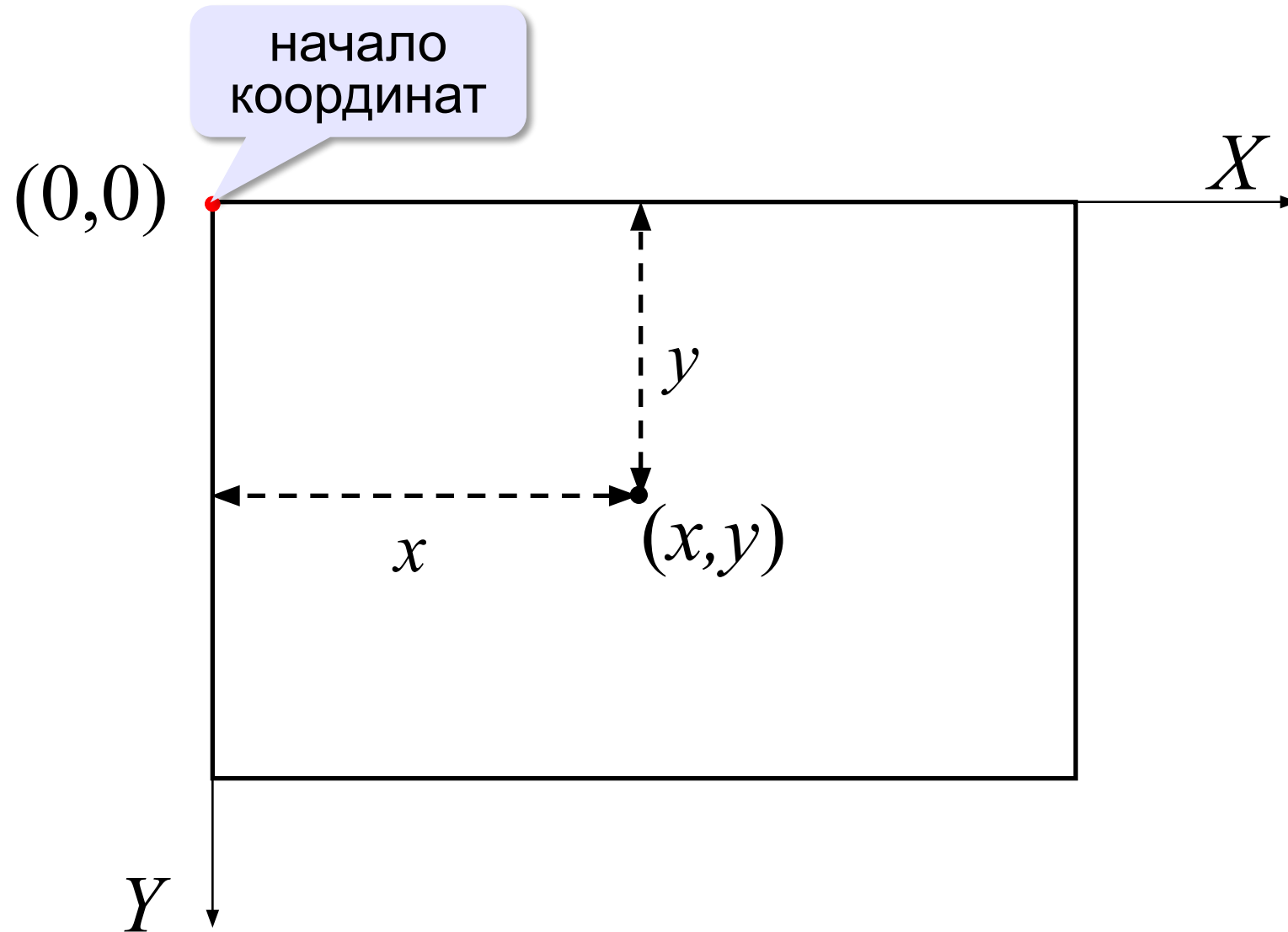


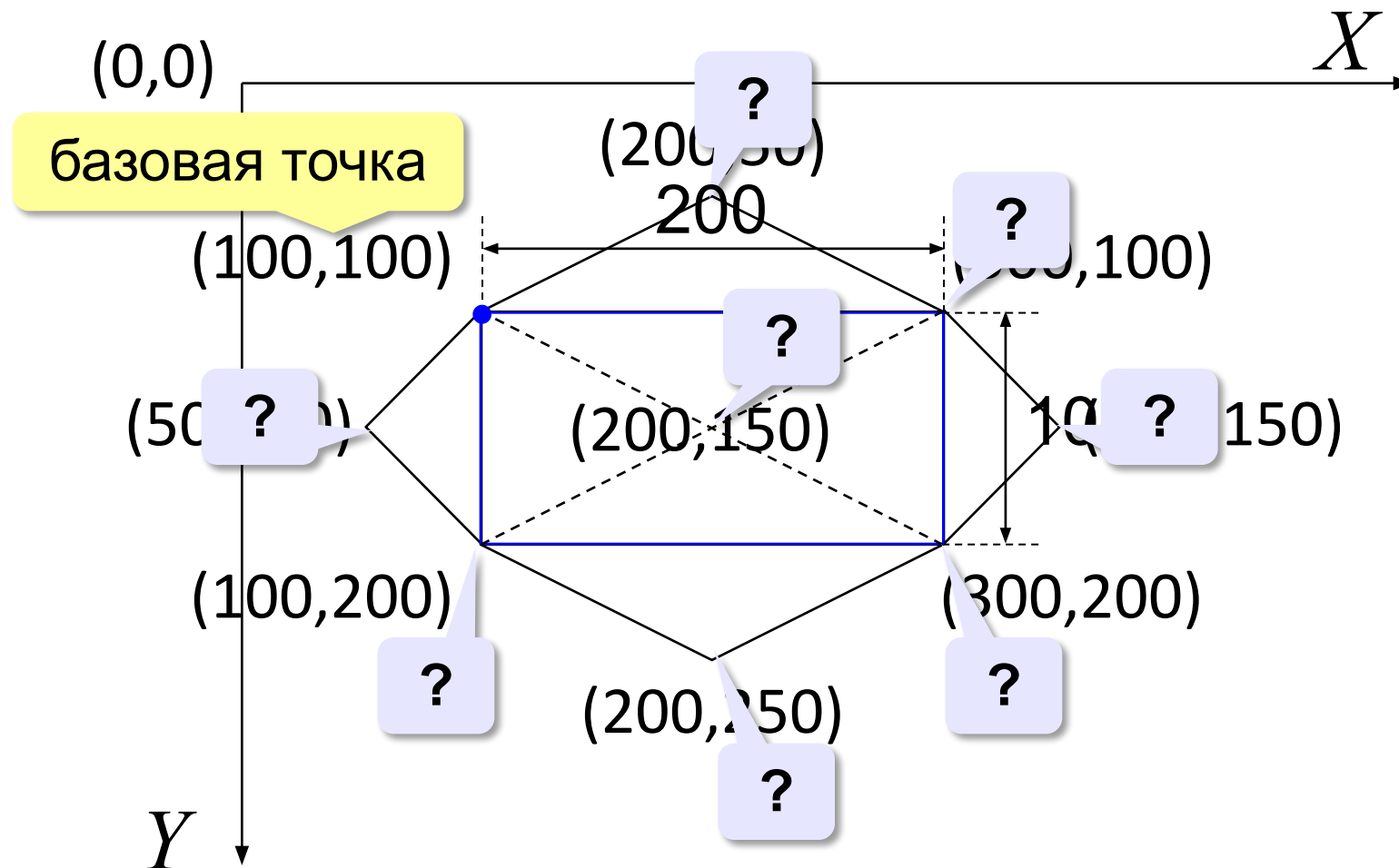
# Программирование на Python: графика

Простые программы

# Система координат



# Определение координат



## Управление цветом

---

### Подключение графического модуля:

```
from graph import *
```

подключить все  
функции модуля graph

### Цвет линий:

```
penColor( "red" )
```

white, black, gray, navy, blue,  
cyan, green, yellow, red, orange,  
brown, maroon, violet, purple, ...

### Толщина линий:

<http://bit.ly/2mNrkoq>

```
penSize( 2 )
```

### Цвет заливки:

```
brushColor( "green" )
```

## Управление цветом (RGB)

Цвет в формате RGB:

```
penColor ( 255 , 255 , 0 )
```

"yellow"

**R**(red)  
0..255

**G**(green)  
0..255

**B**(blue)  
0..255

```
brushColor ( 255 , 0 , 255 )
```

"magenta"

```
penColor ( 0 , 255 , 255 )
```

"cyan"

```
brushColor ( 255 , 255 , 255 )
```


"white"

```
penColor ( 0 , 0 , 0 )
```

"black"

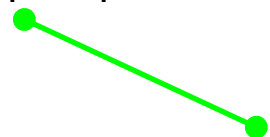
# Примитивы (простейшие фигуры)

$(x, y)$



```
penColor(0, 0, 255)  
point(x, y)
```

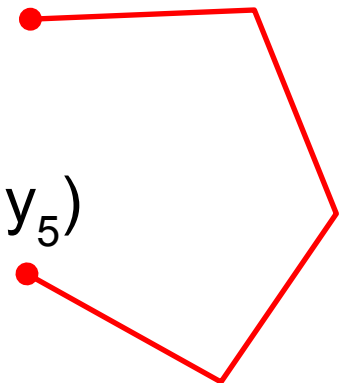
$(x_1, y_1)$



$(x_2, y_2)$

```
penColor(0, 255, 0)  
line(x1, y1, x2, y2)
```

$(x_1, y_1)$



$(x_2, y_2)$

$(x_3, y_3)$

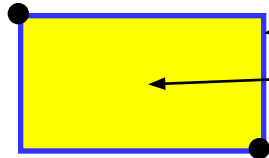
$(x_4, y_4)$

$(x_5, y_5)$

```
penColor(255, 0, 0)  
moveTo(x1, y1)  
lineTo(x2, y2)  
lineTo(x3, y3)  
lineTo(x4, y4)  
lineTo(x5, y5)
```

# Примитивы (простейшие фигуры)

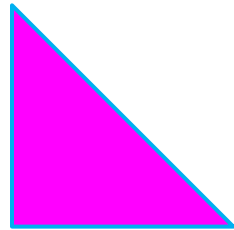
(10, 20)



(50, 40)

```
penColor("blue")  
brushColor("yellow")  
rectangle(10, 20, 50, 40)
```

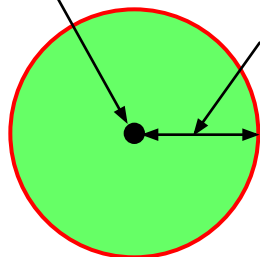
(10, 10)



(10, 50) (50, 50)

```
penColor("cyan")  
brushColor("magenta")  
polygon([ (10, 10), (50, 50),  
          (10, 50), (10, 10) ] )
```

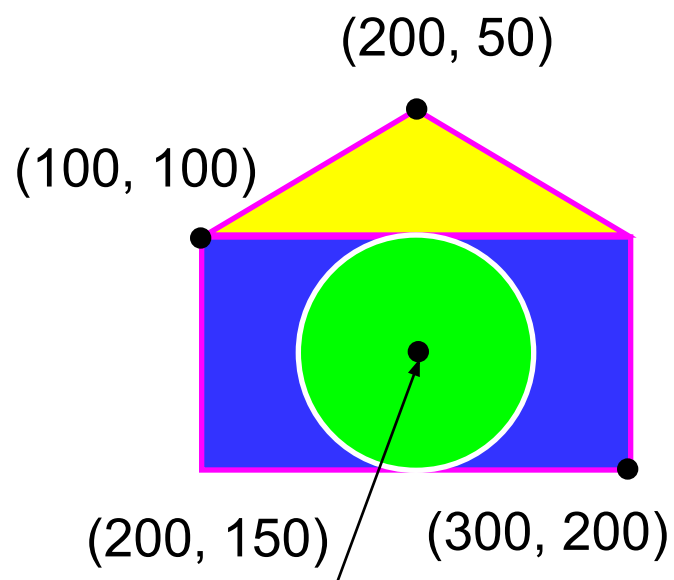
(50, 30)



R=20

```
penColor("red")  
brushColor("green")  
circle(50, 30, 20)
```

# Пример



```
from graph import *
penColor("magenta")
brushColor("blue")
rectangle(100, 100, 300, 200)
brushColor("yellow")
polygon([(100, 100), (200, 50),
         (300, 100), (100, 100)])
penColor("white")
brushColor("green")
circle(200, 150, 50)
run()
```