

Task 1.

+ 2 point

Group Discussion



1st group: What is the most important element in video games?

2nd group: What games do you know using 2d graphics?

3rd group: What libraries of modules in Python do you know?

Lesson topic:
Drawing shapes. Pygame.draw
Module

Lesson objectives:

**learn other pygame modules;
draw different shapes.**



KWL chart

Name _____

Date _____

Topic: _____

Know

Before you read, write what you think you know about the topic.

wonder

Before or during your research, record questions about the topic.

Learned

After you finish reading, write what you learned about the topic.

Task 2.

+ 3 point

Work in Groups

1st group

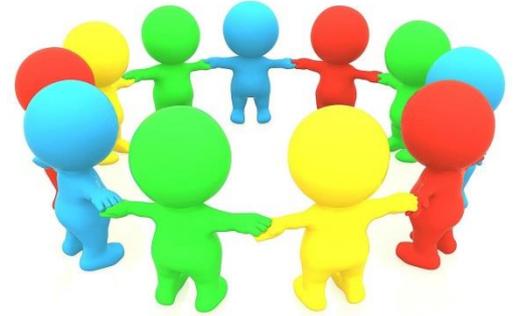
PyGame Drawing Basics

2nd Group

Creating a rectangle and a circle.

3rd Group

Creating a polygon and a line.



Pygame.draw Module

`pygame.draw.rect`

`pygame.draw.polygon`

`pygame.draw.circle`

`pygame.draw.ellipse`

`pygame.draw.line`

`pygame.draw.lines`

`pygame.draw.arc`

draws a rectangular shape on the Surface

draws a shape with any number of sides

draws a circle around a point

draws a round shape inside a rectangle

draws a straight line segment

draws multiple contiguous line segments

draws a partial section of an ellipse

The Draw class has 9 methods for drawing geometric shapes, which have the following general parameters:

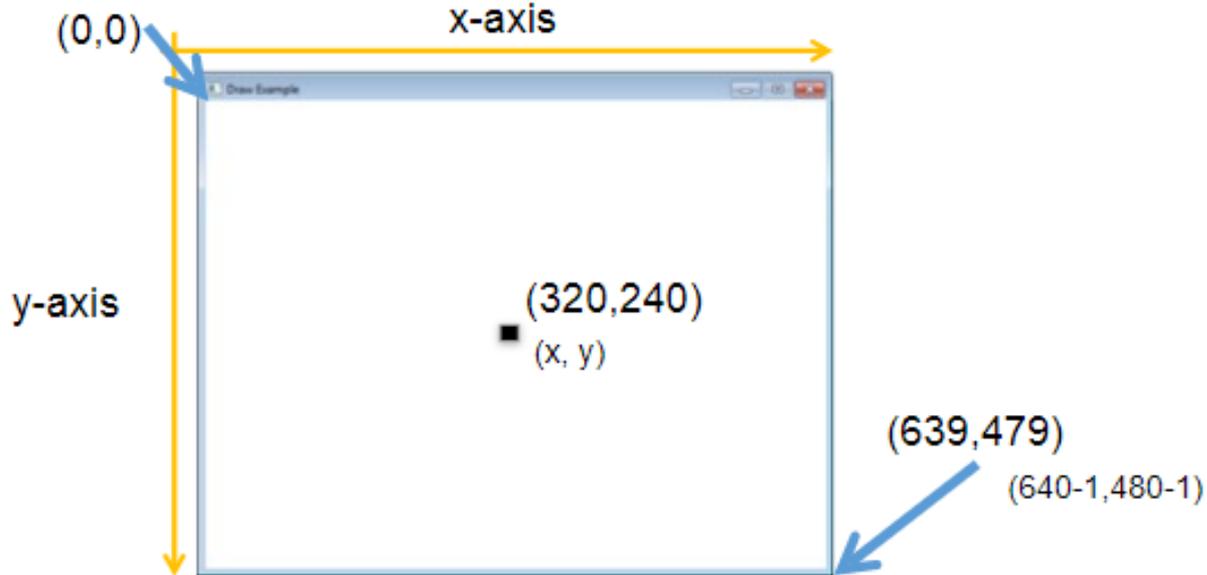
Surface is the drawing surface, in our case it is the screen object.

Color is the color of the shape, it is an RGB tuple, for example, RED = (255, 0, 0).

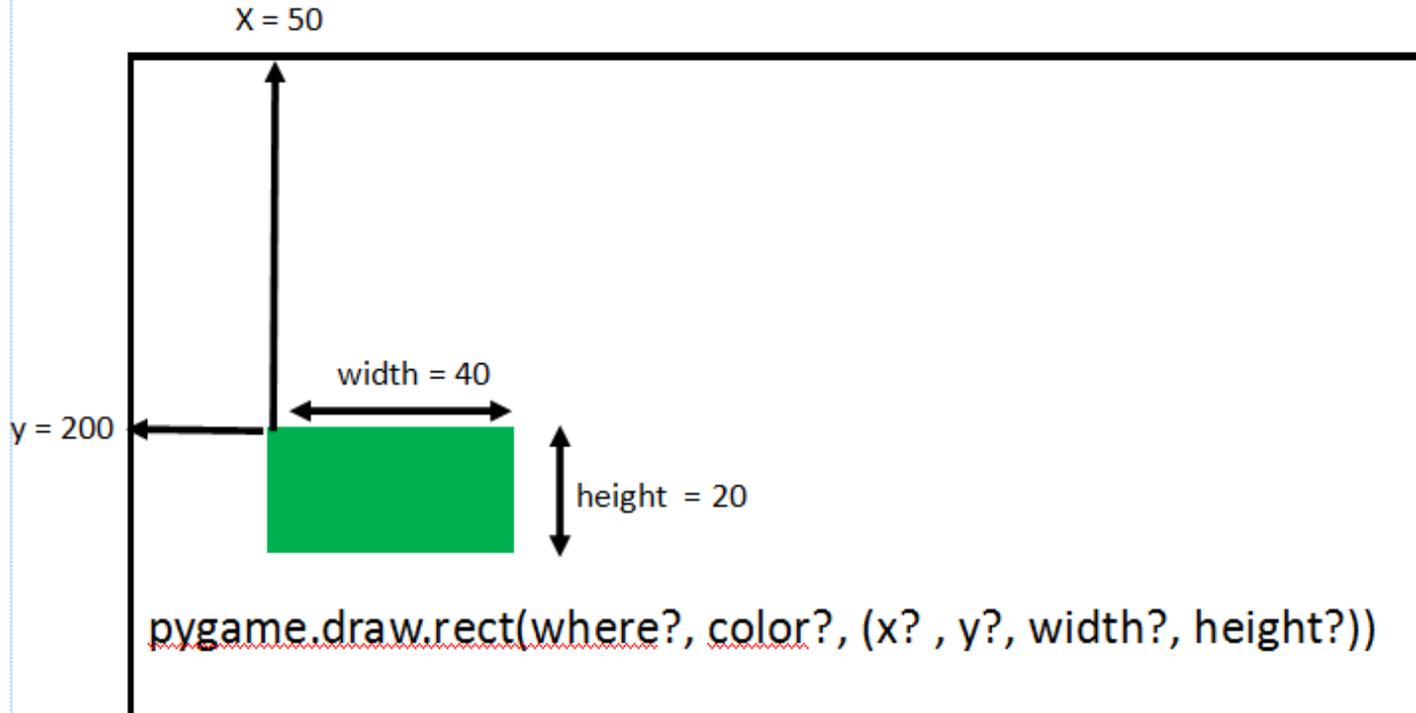
Rect - a rectangular area in which the shape will be drawn. Specified by the Rect(x, y, w, h) tuple, x, y are the coordinates of the upper left corner, w, h are the width, height, width is the line thickness, if width=0, then a filled figure is drawn.

Screen Coordinates

The screen has pixel coordinates starting from (0, 0) in the top-left, and moving across and down.

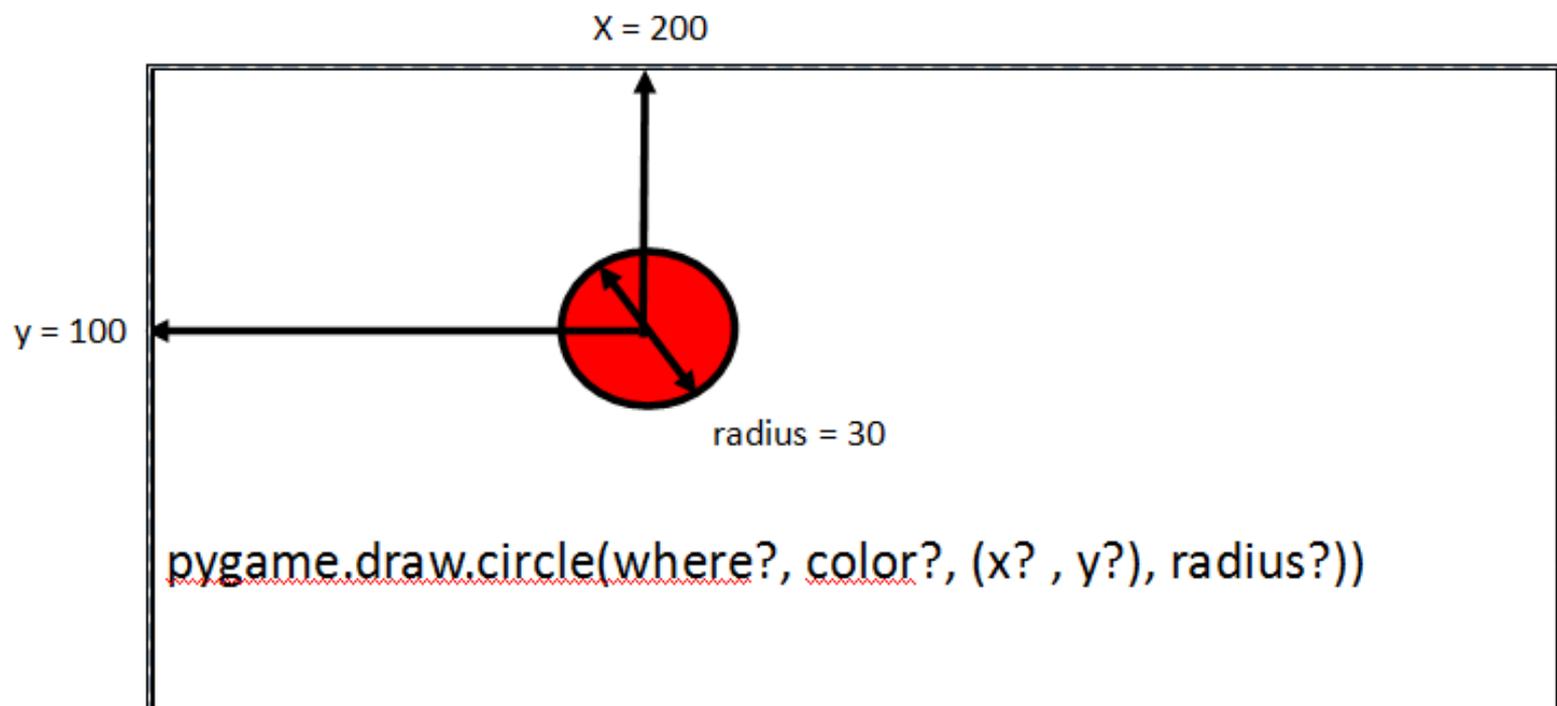


```
pygame.draw.rect(screen, green, (50, 200, 40, 20))
```

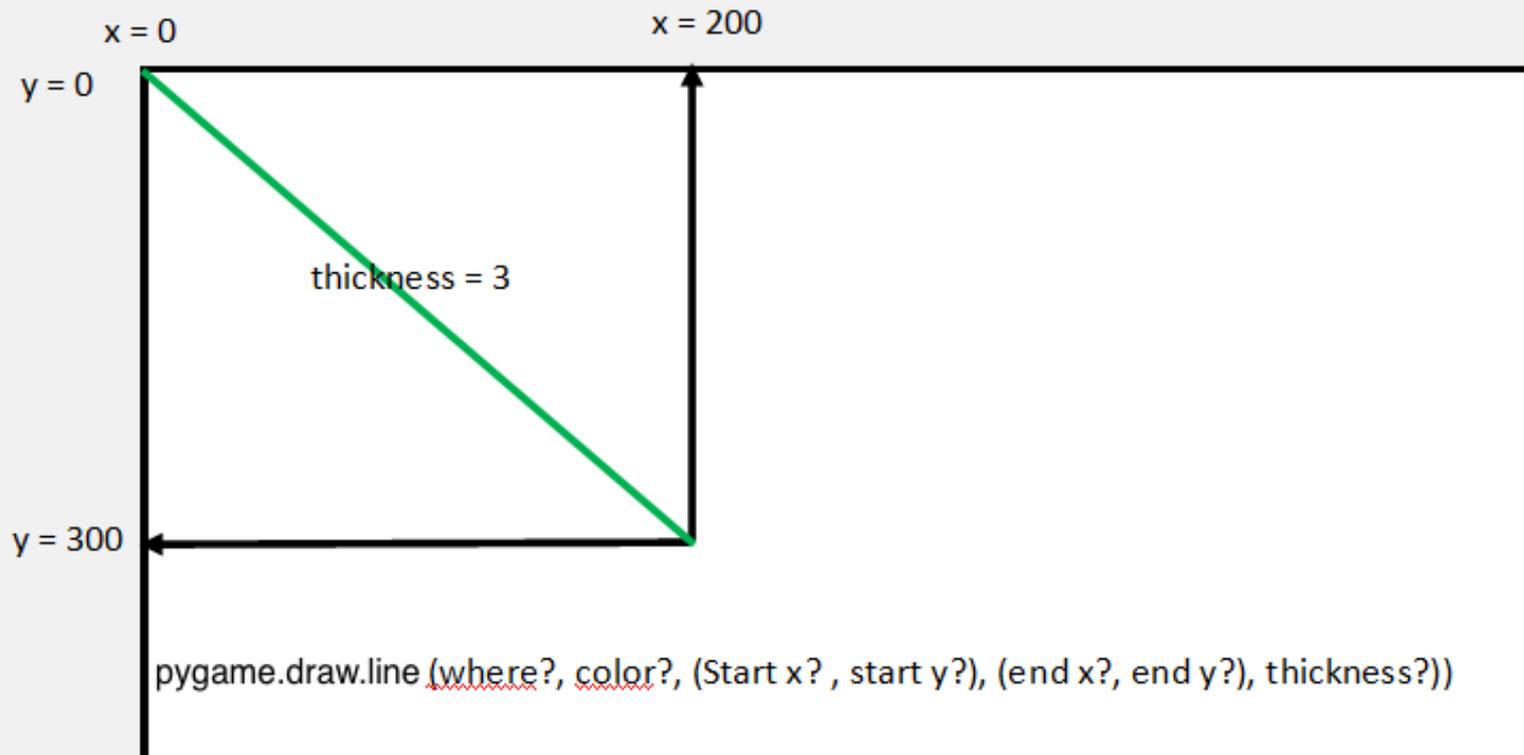


https://youtu.be/53ucZ6_7_t4
(1.13-2.25)

```
pygame.draw.circle(screen, red, (200, 100), 30)
```

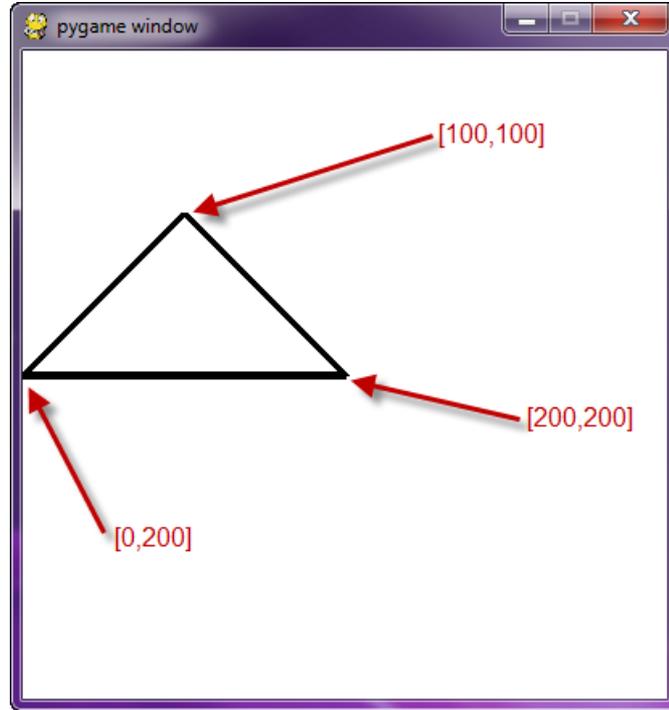


```
pygame.draw.line(screen, green, (0, 0), (200, 300), 3)
```



```
pygame.draw.line(where?, color?, (Start x?, start y?), (end x?, end y?), thickness?)
```

```
# This draws a triangle using the polygon command  
pygame.draw.polygon(screen, BLACK, [[100,100], [0,200], [200,200]], 5)
```



Task 3.

Practical work

+ 3 point

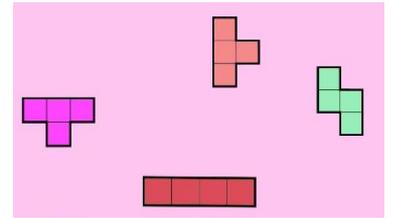
1st group

Draw a tree from Minecraft.



2nd group

Draw the shapes from Tetris.



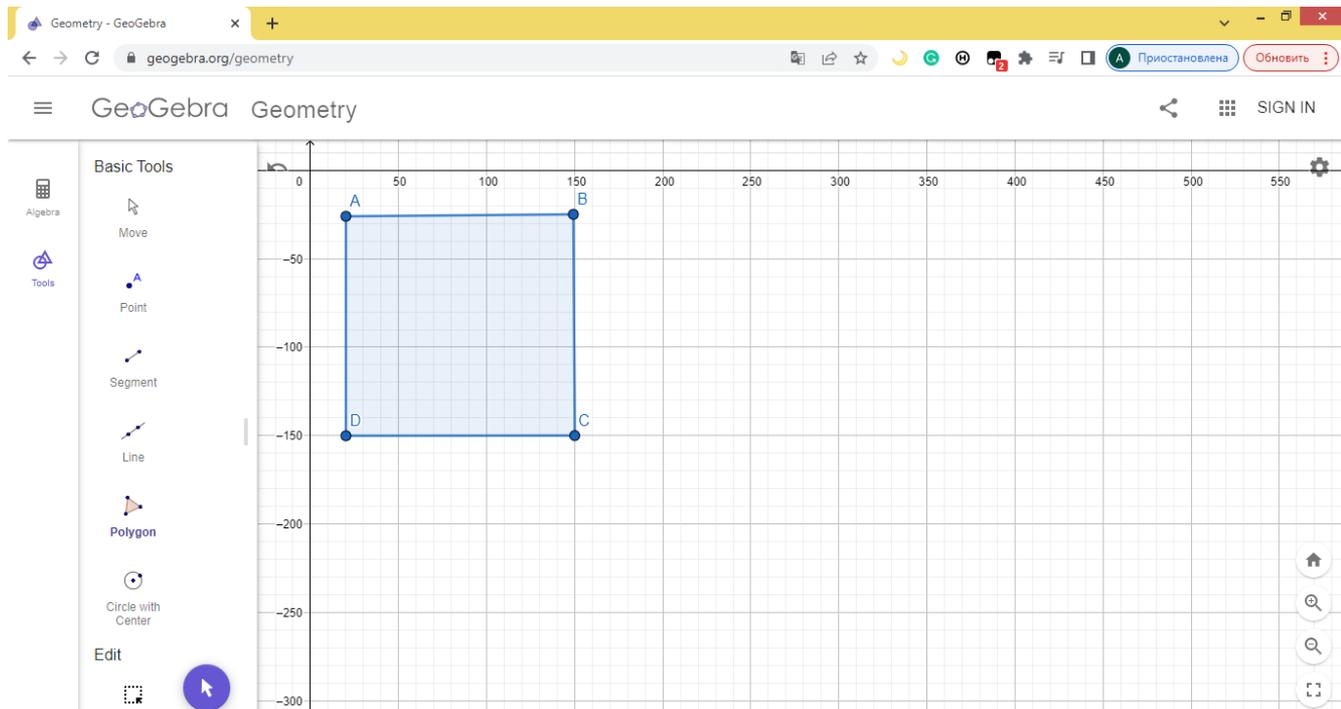
3rd group

Draw background elements from Super Mario.



If you need to determine the coordinates of a figure, you can use the geogebra math program:

<https://www.geogebra.org/geometry>



The screenshot displays the GeoGebra Geometry web application interface. The browser's address bar shows the URL <https://www.geogebra.org/geometry>. The application title is "GeoGebra Geometry". On the left side, there is a "Basic Tools" panel with icons for Move, Point, Segment, Line, Polygon, and Circle with Center. The main workspace is a coordinate grid with x and y axes ranging from 0 to 550 on the x-axis and -300 to 0 on the y-axis. A square is drawn with vertices labeled A, B, C, and D. The vertices are located at approximately (20, -20), (150, -20), (150, -150), and (20, -150) respectively. The square is filled with a light blue color. The interface also includes a "SIGN IN" button and a "Приостановлена" (Paused) button in the top right corner.

Task 4.



+ 5 point

PIN for task: 9RVPD4

The screenshot shows the Wizer.me editor interface. At the top, there is a navigation bar with options: Dashboard, Create, Preview (selected), Assign, Assess, Assess 2.0, and Insights. A 'WORKSHEET' button is visible on the right. Below the navigation bar, the main content area displays a worksheet preview. The worksheet title is 'Drawing shapes. Pygame.draw Module'. The main content of the worksheet is a matching exercise with the instruction 'Match the module name with its function'. The module names listed are 'pygame.draw.rect', 'pygame.draw.circle', and 'pygame.draw.line'. The functions listed are 'draws a circle around a point', 'draws a straight line segment', and 'draws a shape with any number of sides'. The interface also includes a 'RULES PREVIEW' sidebar on the left and a 'PRINT' button in the top right corner of the worksheet area.

Review your differentiated worksheet

RULES PREVIEW

See how they reflect on this worksheet

Select rules to preview

Select rules to view Differentiated versions of this worksheet.

A preview of the learners who receive Differentiated Instruction will appear here.

Drawing shapes. Pygame.draw Module

Match the module name with its function

pygame.draw.rect	draws a circle around a point
pygame.draw.circle	draws a straight line segment
pygame.draw.line	draws a shape with any number of sides