

How to draw pentagon, hexagon and other polygons in Python Turtle?

Polygon is a n-sided closed figure. All the sides of a polygon are of equal length. The naming of a polygon depends on how many sides it is having. An exterior angle of a polygon is $360/(\text{number of sides})$. So, for a pentagon, it will be 72. For a hexagon, it will be 60. And so on.

Number of Sides	Polygon name	Exterior Angle
5	Pentagon	72
6	Hexagon	60
7	Heptagon	51.42
8	Octagon	45
9	Nanogon	40
10	Decagon	36

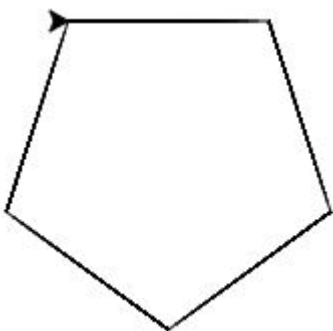
In order to draw pentagon, hexagon and other polygons, we will use the above-mentioned properties.

Draw Pentagon in Python Turtle

```
#Python programming to draw pentagon in turtle programming
import turtle

t = turtle.Turtle()
for i in range(5):
    t.forward(100) #Assuming the side of a pentagon is 100 units
    t.right(72) #Turning the turtle by 72 degree
```

Output of the above program



Explanation of the above code-

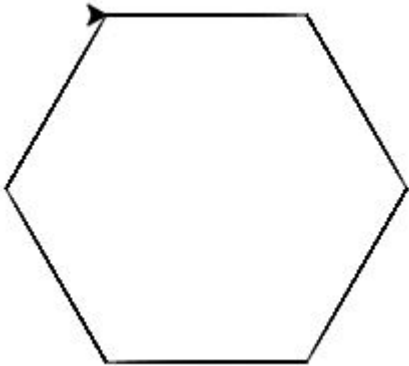
```
for i in range(5):  
    t.forward(100)  
    t.right(72)
```

We are assuming the side of a pentagon is 100 units. So, we will move the turtle in the forward direction by 100 units. And then turn it in the clockwise direction by 72° . Because the exterior angle of a pentagon is 72° . These two statements are repeated 5 times to obtain Pentagon.

Draw Hexagon in Python Turtle

```
#Python programming to draw hexagon in turtle programming  
import turtle  
  
t = turtle.Turtle()  
for i in range(6):  
    t.forward(100) #Assuming the side of a hexagon is 100 units  
    t.right(60) #Turning the turtle by 60 degree
```

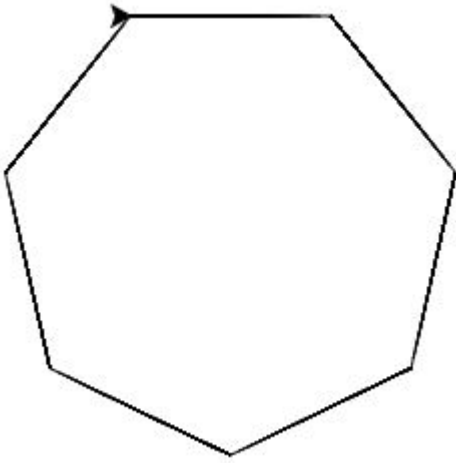
Output of the above program



Draw Heptagon in Python Turtle

```
#Python programming to draw heptagon in turtle programming  
import turtle  
  
t = turtle.Turtle()  
for i in range(7):  
    t.forward(100) #Assuming the side of a heptagon is 100 units  
    t.right(51.42) #Turning the turtle by 51.42 degree
```

Output of the above program

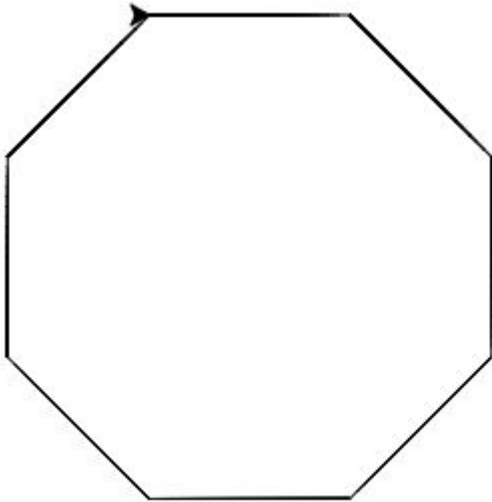


Draw Octagon in Python Turtle

```
#Python programming to draw octagon in turtle programming
import turtle

t = turtle.Turtle()
for i in range(8):
    t.forward(100) #Assuming the side of a octagon is 100 units
    t.right(45) #Turning the turtle by 45 degree
```

Output of the above program



Draw polygon in Python Turtle

```
#Python programming to draw polygon in turtle programming
import turtle

t = turtle.Turtle()
numberOfSides = int(input('Enter the number of sides of a polygon: '))
lengthOfSide = int(input('Enter the length of a side of a polygon: '))
exteriorAngle = 360/numberOfSides
for i in range(numberOfSides):
    t.forward(lengthOfSide)
    t.right(exteriorAngle)
```

Output of the above program

```
Enter the number of sides of a polygon: 9  
Enter the length of a side of a polygon: 100
```

