

The mathematics diagram is given below.

Code:

```
import turtle

def draw_shape(dim, side_length):
    """ draws an n dimensional shape"""
    # external angle property
    angle = 180 - ((dim - 2) * 180) / dim
    # dim sided polygon
    for i in range(dim):
        turtle.fd(side_length)
        turtle.lt(angle)

turtle.pencolor('SpringGreen2')
turtle.pensize(5)

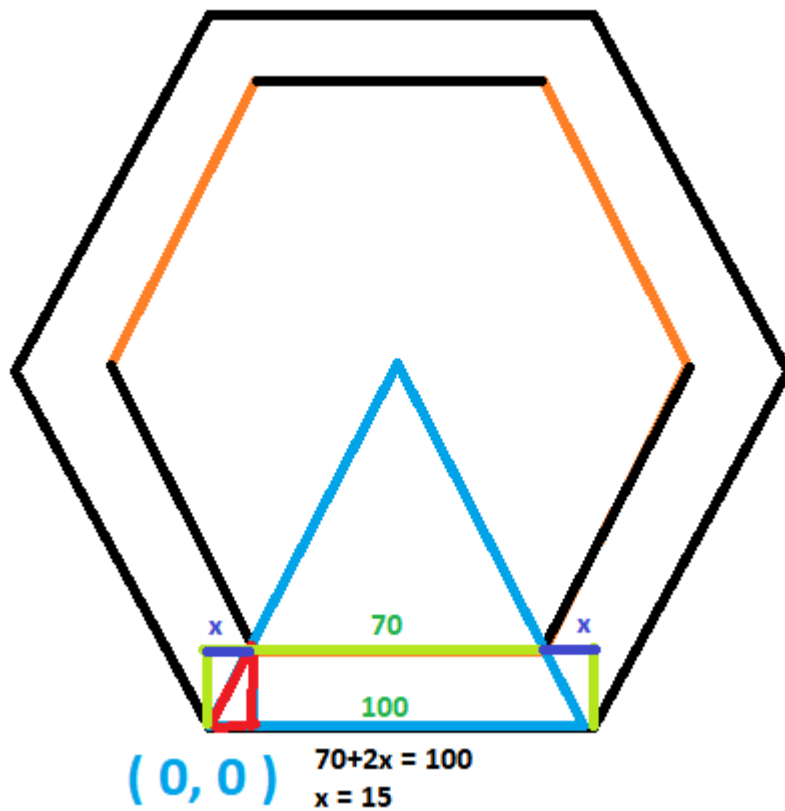
# Drawing an hexagon
draw_shape(dim=6, side_length=100)
# Going to the point we got from maths.
turtle.up()
turtle.goto(15, 15*(3**(1/2)))
turtle.down()

dim = 6
side_length = 70
# external angle property
angle = 180 - ((dim - 2) * 180) / dim

# Drawing at even positions and ruling out odd positions.
for i in range(dim):
    if i % 2 == 1:
        turtle.fd(side_length)
        turtle.lt(angle)
    else:
        turtle.up()
        turtle.fd(side_length)
        turtle.lt(angle)
        turtle.down()

turtle.mainloop()
```

Maths:



Ruling out the triangle we get the following diagram

