1 Generate a vector of in the interval [-7,7] using numpy package with 50 subintervals

from pylab import \*
import numpy as np

X = np. linspace (-7, 7, 50)

print(x).

② (-π, π) 50 subinterval

a = np. linspace (pi, pi, 50) print (a).

Rotate the point A = (3,4) by 90 degrees using python

from sympy import \*
A = Point (3,4)

B = A. rotate (90)

print (B)

olp: -4\*sin(90) +3\*cos(90), 4\*cos(90)+3\*sin(90)

(4) Apply scaling in x direction by 3 units on the point A = (3, 4)

from sympy import \*
A = Point(3,4)
B = A. scale (3,1)
print (B)

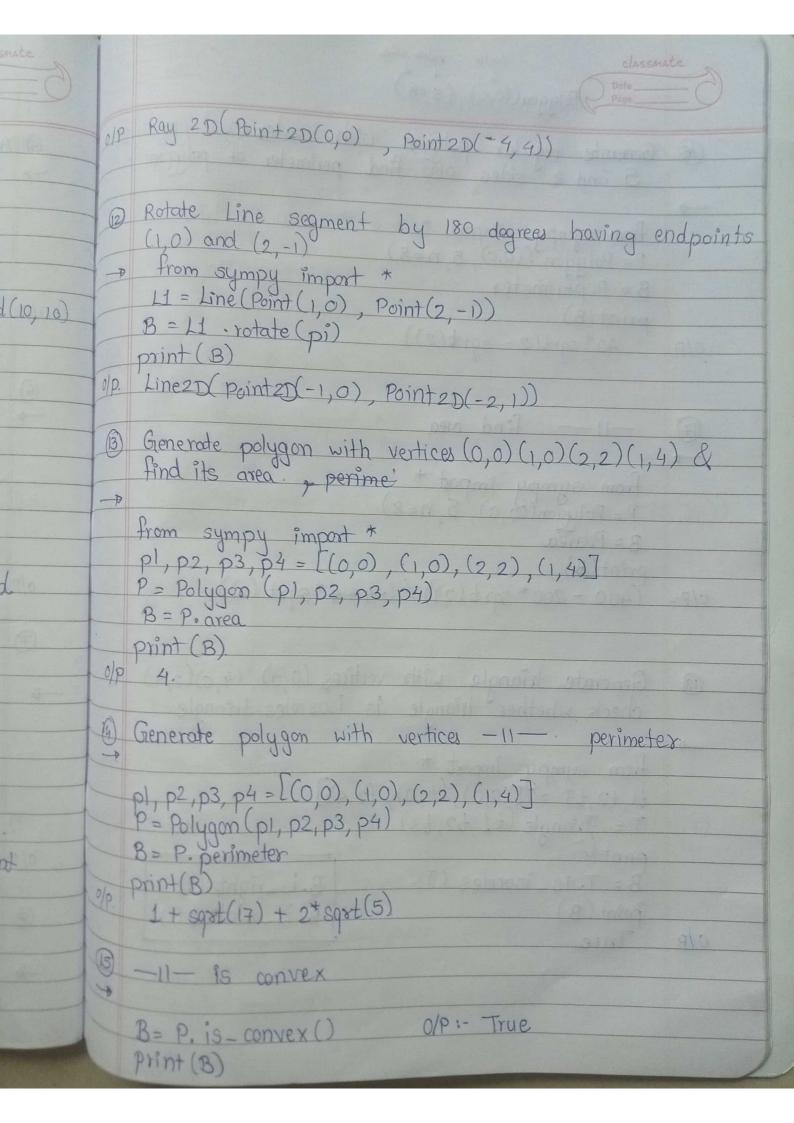
alp- Point 2D (9,4)

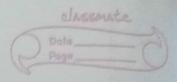
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	Poge
0	Apply scaling in y direction by 3 units on pt A=(3,4)
P	from sympy import *
1	A = Point(3,4)
1	B= A. 6 cale (1,3) print (B)
1	Point 2D (3, 12)
1	Juanus suit in to the ball
)	Reflect point A = (3,4) through line octy = 0
D.	from sympy import *
	from sympy import *  x, y = symbols ('x y')
	$A = Point(3, 4)$ $B = A \cdot reflect(Line(x+y))$
	print (8)
PL	Point 2D(-4, -3)
	Generate line passing through points (2,3) and (4,3)
	Generate line passing through points (2,3) and (4,3) and find eq of line
1	The restriction of the second
-	from sympy import *
	trom sympy simples $(x, y) = \text{symbols}(x, y) = \text{symbols}(x, y)$ $L1 = \text{Line}(\text{Point}(2,3), \text{Point}(4,3))$
	5 = 11. Equally ()
	Print (B)
	4-3
	Generate line segment having endpoints (0,0) & (3,10)
	tind length of line segment
	trom sympy import *

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	31 - Segment (Point (0,0) and Point (10,10)) B = S1 length
O/P-	print(B) 10* sqrt(2)
9	Generate line segment having endpoints (0,0) and (10,10) find midpoint of line segment.
olp.	from sympy import *  x, y = symbols('x y')  S1 = Seament(Point(0,0), Point(10,10))  B = S1. midpoint  Print(B)  Point2D(5,5)
(b)	Generate line passing through points (2,3) and (4,3) and find slope of the line
0/2:-	from sympy import * $x, y = \text{symbols}(x, y')$ L1 = Line (Point(2,3), Point(4,3)) $B = L1$ . slope  print(B)
	Rotale the ray by 90 degrees having starting point (0,0) in the direction of (4,4)
	from sympy import *  x, R1 = Ray (Point (0,0), Point (4,4))  B = R1. rotate (pi/2)





Generate regular polygon with center (0,0), radius 5 and 8 sides also find perimeter of polygon. from sympy import \* P = Polygon ((0,0), 5, n=8) B = P. perimeter print (B) 0/2 40 + sqrt(2 - sqrt(2)) (7) -11 — find area from sympy import \* P = Polygon((0,0), 5, n=8) B = P. area print(B) (400 - 200 \* sqrt(2)) / (-4+4 \* sqrt(2)) Generate triangle with vertices (0,0), (4,0)(2,4) check whether trangle is isosceles triangle. from sympy import to  $t1, t2, t3 = \Gamma(0,0), (4,0), (2,4)$ = Triangle (t1, t2, t3) B= T. is\_isorcles () B. is\_right () print (B) B. is\_scalene () 0/P True

0	Generate triangle with sides 3,4,85 units
	from Sympy import *  T = Triangle (sss = (3,4,5))  print (T)
	print $(T)$ $(SSS = (3,4,5))$
of P	Triangle (Point2D(0,0), Point2D(3,0), Point(3,4))
2	Generate A with sides 1, 2 & angle 30°
	from sympy import * $T = Triangle (sas = (1, 30, 2))$ print(T)  The state (sas = (1, 30, 2))
	T= Triangle (sas = (1, 30, 2)
ole	Print (T) Trangle (Point 2D(0,0), Point 2D(2,0), Point 2D(sqrt (3)/2, 1/2))
1	Generate Δ with vertices (0,0), (1,0), (5,1).
	from sympy import * $t_{1,12,t3} = [(0,0), (1,0), (5,1)]$
	$t_{1,12}, t_{3} = L(0,0), (1,0), (5,1)$
	T= Triangle(t1, t2, t3)
olp.	T= Triangle (t1, t2, t3) Drint (T)
1	T= Triangle (t1, t2, t3)  print (T)  Triangle (Point2D(0,0), Point2D(1,0), Point2D(5,1))
0/P	T= Triangle (t1, t2, t3)  print (T)  Triangle (Point2D(0,0), Point2D(1,0), Point2D(5,1))  Retate the 1 by 270° having vertices (-1, 2) (2, -5) (-1, 7)
1	T= Triangle (t1, t2, t3)  print (T)  Triangle (Point2D(0,0), Point2D(1,0), Point2D(5,1))  Retate the 1 by 270° having vertices (-1, 2) (2, -5) (-1, 7)
1	T= Triangle (t1, t2, t3)  print (T)  Triangle (Point2D(0,0), Point2D(1,0), Point2D(5,1))  Rotate the $\Delta$ by $276^{\circ}$ , having vertices (-1, 2) (2, -5) (-1,7)  from sympy import † $11, 12, 13 = [(-1,2), (2, -5), (-1,7)]$ $T = Triangle (t1, t2, t3)$
1	T= Triangle (t1, t2, t3)  print (T)  Triangle (Point2D(0,0), Point2D(1,0), Point2D(5,1))  Rotate the $\Delta$ by $276^{\circ}$ , having vertices (-1, 2) (2, -5) (-1,7)  from sympy import † $11, 12, 13 = [(-1,2), (2, -5), (-1,7)]$ $T = Triangle (t1, t2, t3)$
1	T= Triangle ( $\pm 1$ , $\pm 2$ , $\pm 3$ )  Print ( $\pm 7$ )  Triangle (Point $\pm 2D(0,0)$ , Point $\pm 2D(1,0)$ , Point $\pm 2D(5,1)$ )  Rotate the $\pm 1$ by $\pm 270^\circ$ , having vertices (-1, 2) (2, -5) (-1, 7)  from sympy import $\pm 1$ to