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1. Find the arc length of a circle from a given angle.Your input angle should be taken in degree.

d = int(input("Enter the diameter of the circle: "))

a = int(input("Enter the angle of the circle: "))

pi = 3.1416

Arc\_length = (2\*pi\*d) \* (a/360)

print('The arc length of the circle is: ',Arc\_length)

#output :

Enter the diameter of the circle: 50

Enter the angle of the circle: 45

The arc length of the circle is: 39.269999999999996

2.Find the area and volume of a circle from a given radius.

r = int(input("Enter the radius of the circle: "))

pi = 3.1416

area = pi \* (r\*\*2)

print("Area = ", area)

volume= 4/3\*pi\* r\*\*3

print('The volume of the circle is: ',volume)

#output:

Enter the radius of the circle: 2

Area = 12.5664

The volume of the circle is: 33.5104

3.Find the Euclidean distance between 2 given points

x1 = 3

x2 = -2

y1= -3

y2= 2

distance = ((x2-x1)\*\*2 + (y2-y1)\*\*2)\*\*0.5

print(distance)

#output : 7.0710678118654755

4.Find the degree and minute difference of 2 points from given latitude and longitude

lat\_1 = 2500

lon\_1 = 8110

lat\_2 = 3010

lon\_2 = 6690

lat\_1\_m = ((lat\_1 // 100) \* 60) + (lat\_1 % 100)

lon\_1\_m = ((lon\_1 // 100) \* 60) + (lon\_1 % 100)

lat\_2\_m = ((lat\_2 // 100) \* 60) + (lat\_2 % 100)

lon\_2\_m = ((lon\_2 // 100) \* 60) + (lon\_2 % 100)

d\_lat = abs(lat\_2\_m - lat\_1\_m)

d\_lon = abs(lon\_2\_m - lon\_1\_m)

d\_lat\_m = f"Latitude Difference {d\_lat // 60} Degrees and {d\_lat % 60} Minutes"

d\_lon\_m = f"Longitude Difference {d\_lon // 60} Degrees and {d\_lon % 60} Minutes"

print(d\_lat\_m, d\_lon\_m)

#output:

Latitude Difference 5 Degrees and 10 Minutes Longitude Difference 13 Degrees and 40 Minutes

5. Given its length of 4 side of a trapezium, find its area.

a = int(input('Enter the value of a: '))

b = int(input('Enter the value of b: '))

c = int(input('Enter the value of c: '))

d = int(input('Enter the value of d: '))

s = (c+d+b-a)/2

triangle\_area = (s \* (s-c) \* (s-d) \* (s- (b-a)))\*\*0.5

height = (2 \* triangle\_area) / (b-a)

print(height)

trapi\_area = ((a+b)/2) \* height

print(f'The area of the trapezium is', (trapi\_area))

#output:

Enter the value of a: 50

Enter the value of b: 60

Enter the value of c: 20

Enter the value of d: 22

19.983993594874875

The area of the trapezium is 1099.1196477181181