#Roshan Chawan 22CV013

# Stress When depth is constant

Q = float (input ("Enter the value of Load in kN: "))

N= int (input ("Number of data values of radial distance: "))

pi = 3.14159265359

Z = float (input ("Depth: "))

r = []

for i in range (0, N):

  print ("Enter radial distance in m".format (i+1))

  Value\_r = float(input () )

  r.append (Value\_r)

  Stress = ((3\*Q)/(2\*pi\*Z\*Z) ) \* (((1/ (1+((Value\_r/Z) \*\*2))) ) \*\*2.5)

  print("Stress: ", Stress, "kN/m^2")

Output:-

Enter the value of Load in kN: 2500

Number of data values of radial distance: 5

Depth: 6

Enter radial distance in m

1

Stress: 30.962130445358056 kN/m^2

Enter radial distance in m

2

Stress: 25.479163627894877 kN/m^2

Enter radial distance in m

3

Stress: 18.98033449112347 kN/m^2

Enter radial distance in m

4

Stress: 13.22290223969301 kN/m^2

Enter radial distance in m

5

Stress: 8.871775810212231 kN/m^2

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# Stress when Radius is Constant

Q = float (input("Enter the value of Load in kN: "))

M= int (input ("Number of data values of depth: "))

pi = 3.14159265359

r = float (input("Radial Distance: "))

Z = []

for j in range (1, M+1):

  print("Enter depth in z".format (j))

  Value\_Z = float(input ())

  Z. append (Value\_Z)

  Stress = ((3\*Q)/(2\*pi\*Value\_Z\* Value\_Z)) \* ((1/ (1+ ( (r/Value\_Z) \*\*2))) )\*\*2.5

  print("Stress: ", Stress, "kN/m^2")

Output:-

Enter the value of Load in kN: 2500

Number of data values of depth: 5

Radial Distance: 6

Enter depth in z

1

Stress: 0.14334319650628732 kN/m^2

Enter depth in z

2

Stress: 0.9436727269590699 kN/m^2

Enter depth in z

3

Stress: 2.372541811390434 kN/m^2

Enter depth in z

4

Stress: 3.917896959909041 kN/m^2

Enter depth in z

5

Stress: 5.1341295197987495 kN/m^2

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# Stress when Radius is Constant

Q = float (input("Enter the value of Load in kN: "))

M= int (input ("Number of data values of depth: "))

pi = 3.14159265359

r = float (input("Radial Distance: "))

Z\_values = []

for j in range (1, M+1):

  print("Enter depth in z".format (j))

  Value\_Z = float(input ())

  Z\_values.append (Value\_Z)

  Stress = ((3\*Q)/(2\*pi\*Value\_Z\* Value\_Z)) \* ((1/ (1+ ( (r/Value\_Z) \*\*2))) )\*\*2.5

  print("Stress: ", Stress, "kN/m^2")

Output:-

Enter the value of Load in kN: 2500

Number of data values of depth: 5

Radial Distance: 6

Enter depth in z

1

Stress: 0.14334319650628732 kN/m^2

Enter depth in z

2

Stress: 0.9436727269590699 kN/m^2

Enter depth in z

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Stress: 2.372541811390434 kN/m^2

Enter depth in z

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Stress: 3.917896959909041 kN/m^2

Enter depth in z

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Stress: 5.1341295197987495 kN/m^2